The Bay Area's Computer Magazine

March 19, 1990 • 67

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NEW SECTION: BUSINESS SOLUTIONS

He's Betting On Harvard Graphics And OS/2...

Software Publishing Corporation's Fred Gibbons predicts his company's Intel-based business market will migrate from DOS to OS/2 in the '90s. *Story on page 80*

DAWN OF THE SUPERSERVER

"The Compaq SystemPro provides you with a platform that does the toughest multiuser jobs on your list—fast and dependably."

STORY ON PAGE 70

COMPAQ'S NOTEBOOK-SIZED 286

"This is the first super-light portable I've worked with that really gets the job done without forcing me to make tough choices."

STORY ON PAGE 74

DVORAK'S MAILBOX

"John, Novell is in for some rough times ahead. Everyone is jumping on the LAN Manager bandwagon."

STORY ON PAGE 202

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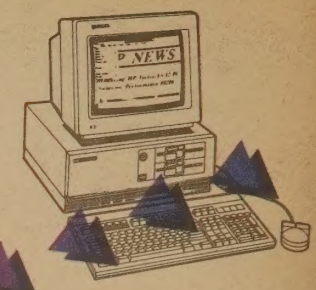

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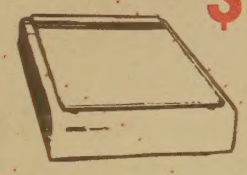

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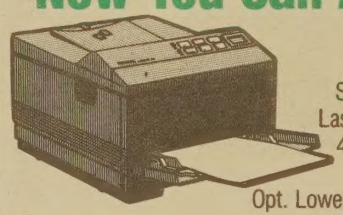

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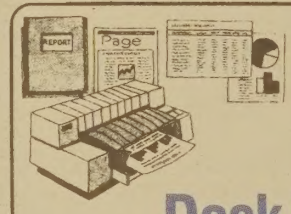

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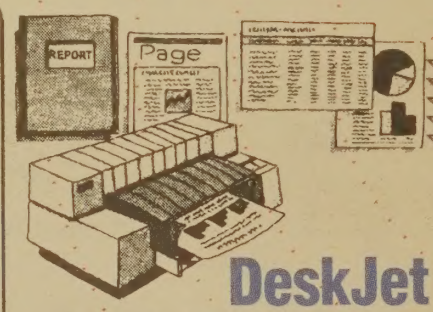

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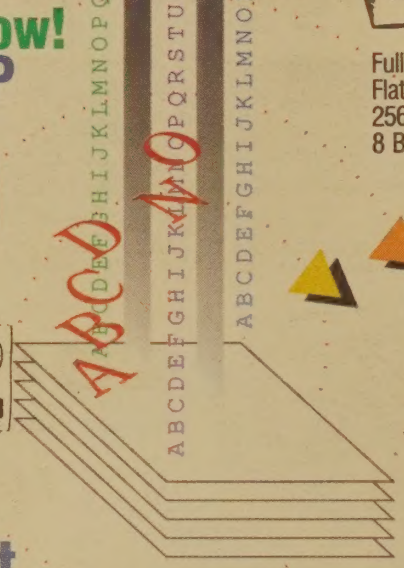

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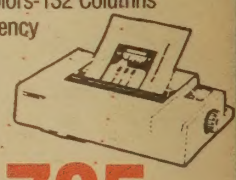

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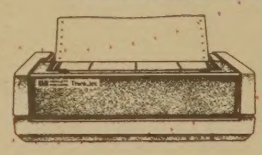

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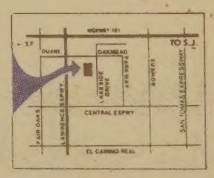

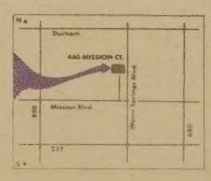

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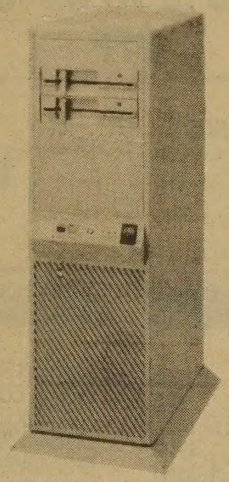

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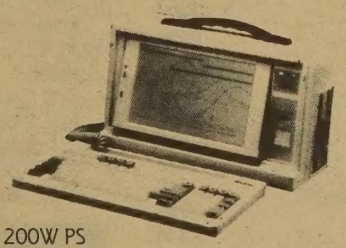

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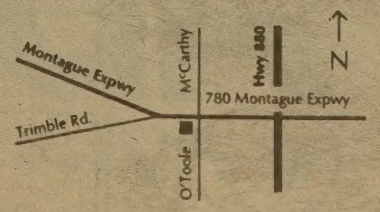

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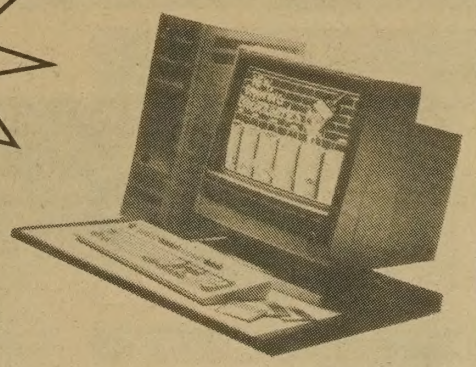
486 SPEED IS 117 MHz ON LANDMARK

114 MHz!!



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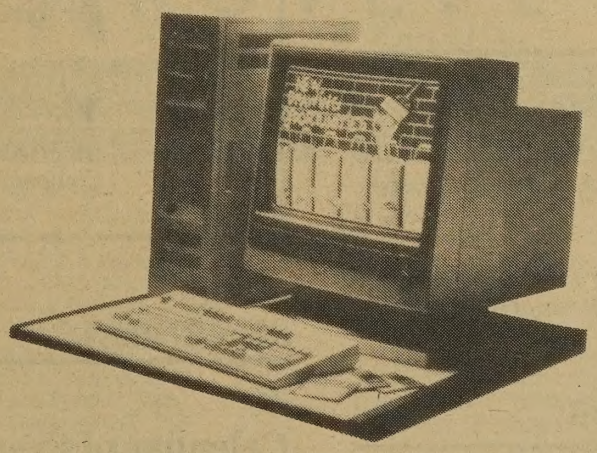

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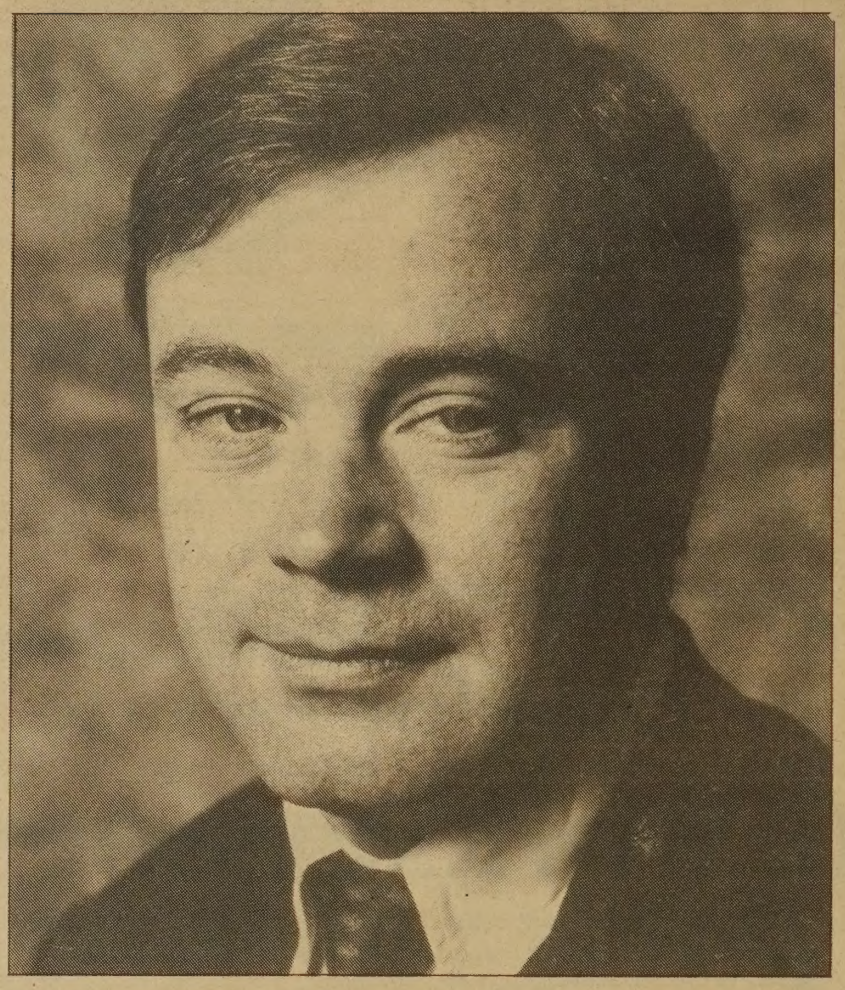

COVER STORY

80
From Consumer To Corporate
Software Publishing Corporation In A New Decade
By Mary Eisenhart
Cover and Contents Photos: Jay Blakesberg
SPC founder Fred Gibbons talks about the company's evolution from specializing in entry-level products to serving the needs of the corporate user.

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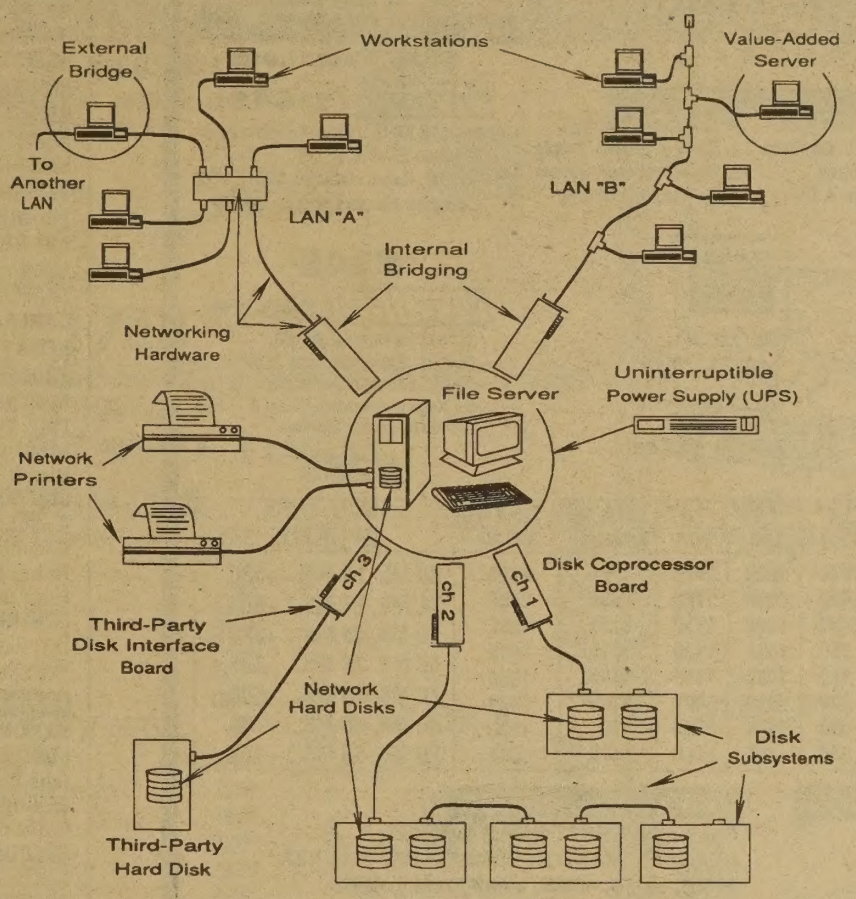

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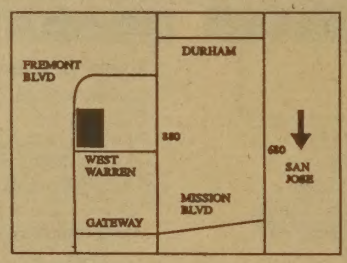

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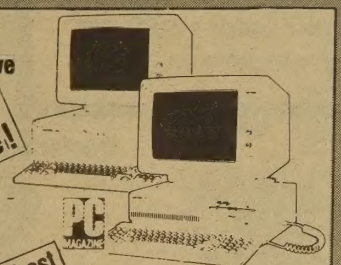

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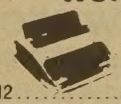

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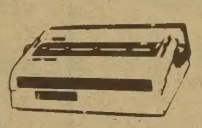

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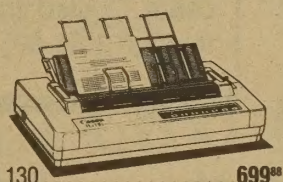

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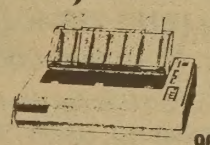

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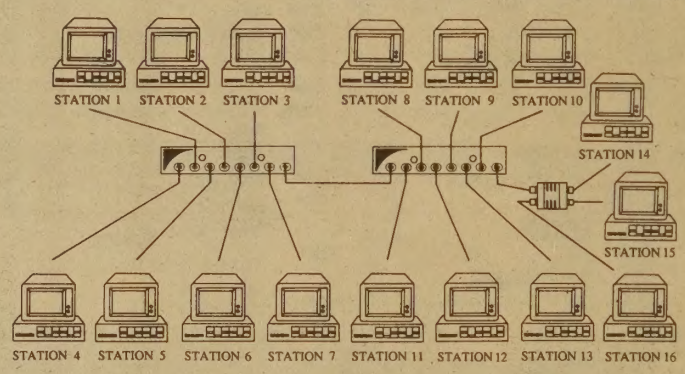

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CALENDAR OF EVENTS

March 19–20 Computing with Adaptive Neural Networks Seminar. San Francisco. AI Expert. Call: Angela Hoyte, (415)996-2471.

March 19 MS DOS For CAD, Level II Seminar. San Francisco. San Francisco State University Extended Education. Call: (415)338-1205.

March 19–22 Intermediate C Programming Class. Berkeley. Lurnix. Call: 1-800-433-9338.

March 19 Overview Of Productivity And Creativity Tools Seminar. Sunnyvale. Women's Computer Society. Call: (408)574–8225.

March 20 How To Successfully Automate Your Accounting System—A Free Seminar. San Francisco. J.C. Lukrich & Co., CPA. Call: (415)864-6770.

March 20–22 Planning Local Area Networks Seminar. Palo Alto. Network Career Advancement Institute. Call: (714)838-5458.

March 20 How To Build Your CAD System Seminar. San Francisco. San Francisco State University Extended Education. Call: (415)338-1205.

March 20–23 Communicating Effectively Class. San Francisco. Integrated Computer Systems. Call: 1-800-421-8166.

March 20 Hard Disk Management Course. San Francisco. Training Works. Call: (415)243-0100.

March 20–April 27 Stanford Communications Workshops. Palo Alto. Stanford University. Call: (415)723-0544.

March 20 OOP SIG. Palo Alto. Software Entrepreneurs' Forum. Call: (415)691-6727.

March 21–23 FMS/AC CAD Facility Mapping Seminar. San Francisco. San Francisco State University Extended Education. Call: (415)338-1205.

March 21 Desktop Publishing With WordPerfect 5.0 Course. San Francisco. Training Works. Call: (415)243-0100.

March 22–May 31 Advanced Programming in dBASE III+/IV, Clipper And FoxPro. Berkeley. Vista College. Call: (415)841-8431.

March 22 Godel, Julia Goldbach—What Have They To Do With Computing Over The Real Numbers Lecture. San Francisco. University of San Francisco. Call: (415)666-6530.

March 24 Computer Swap. Santa Clara. Richard James. Call: 1-800-433-7469.

March 24 dBASE III Course. San Francisco. Training Works. Call: (415)243-0100.

March 25–28 The 1990 SPA Spring Symposium. San Diego. Software Publishers Association. Call: Jodi Polock, (202)452-1600.

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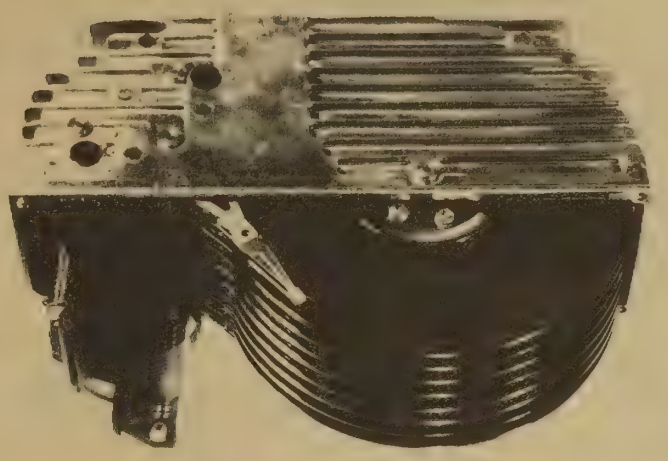

Specifications

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Capacity: 380MB Unformatted
335MB Formatted
Average Access: 16ms
Track-Track seek: 5ms
SCSI Transfer: 4MB/sec
MTBF: 100,000 POH

CONTROLLER
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Sync Transfer: 5.3MB/s
Bus Transfer: 16Bit DMA
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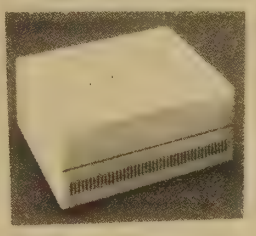

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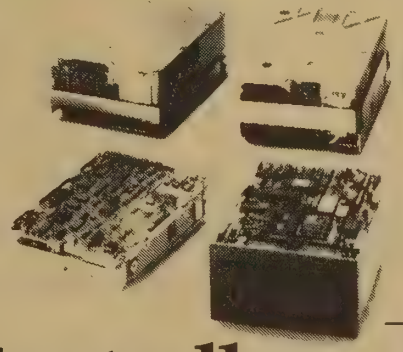

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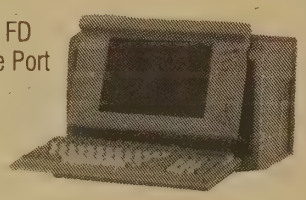

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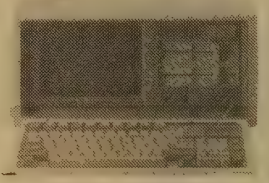

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March 25 East-West Computer Show & Sale. Sacramento. East-West Shows. Call: (415)388-8893.

March 26–29 Technology For The 1990's: Multimedia Exposition. New York. American Expositions. Call: (212)226-4141.

March 26 IBM PC & DOS Training Seminar. San Francisco. San Francisco State University Extended Education. Call: (415)338-1205.

March 26–27 Concepts In System Operation Class. Berkeley. Lurnix. Call: 1-800-433-9338.

March 27–29 DB/EXPO '90: The National Database Exposition And Conference. San Francisco. Norm De Nardi Enterprises. Call: 1-800-2DBEXPO.

March 27–29 Supercomputing Japan '90. Tokyo, Japan. Meridian Pacific Group. Call: (415)381-2255.

March 27–30 Real-Time Programming: A Hands-On PC Workshop. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

March 27–30 Introduction To Datacomm & Networks Course. San Francisco Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

March 27 Introduction To Novell Seminar. San Francisco. San Francisco State University Extended Education. Call: (415)338-1205.

March 27 Philippe Kahn, President of Borland Lecture. San Francisco. Bay Area Users Groups. Call: (415)788-5338.

March 28–30 Mechanical Design & Drafting Seminar. San Francisco. San Francisco State University Extended Education. Call: (415)338-1205.

March 28–29 System Administration Class. Berkeley. Lurnix. Call: 1-800-433-9338.

March 29 Cellular Automata And Artificial Life Lecture. San Francisco. University of San Francisco. Call: (415)666-6530.

March 29 Trojan Horses, Bombs, Worms, Cookie Monsters And Viruses (Speaker). Oakland. Mills College. Call: (415)430-2144.

March 31 East-West Computer Show & Sale. Oakland. East-West Shows. Call: (415)388-8893.

March 31 Computer Law For The 90's Symposium. San Francisco Communications and Entertainment Law Journal. Call: Kyra Reppen, (415)565–4731.

April 1 East-West Computer Show & Sale. Santa Rosa. East-West Shows. Call: (415)388-8893.

April 1–2 Computer Game Developers' Conference. San Jose. Call: (408)942-0387.

April 2 MS DOS For CAD, Level I Seminar. San Francisco. San Francisco State University Extended Education. Call: (415)338-1205.

April 2–3 Fundamentals Of UNIX Class. Berkeley. Lurnix. Call: 1-800-433-9338.

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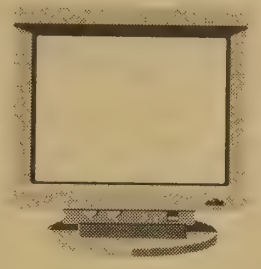

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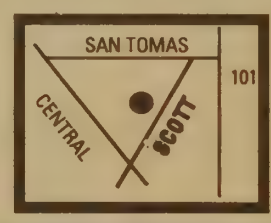

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April 2 Harvard Graphics Course. San Francisco. Training Works. Call: (415)243-0100.

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April 4–6 Fourth Annual Parallel Processing Symposium. Fullerton. IEEE Computer Society. Call: Dr. Larry H. Canter, (714)738-3414.

April 4 Automating Your Business Accounting System On The Macintosh—A Free Seminar. San Francisco J.C. Lukrich & Co., CPA. Call: (415)864-6770.

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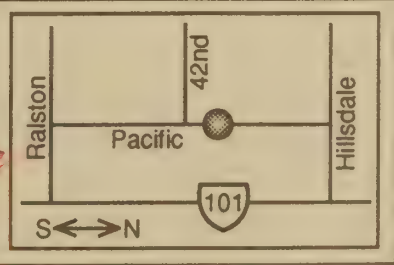

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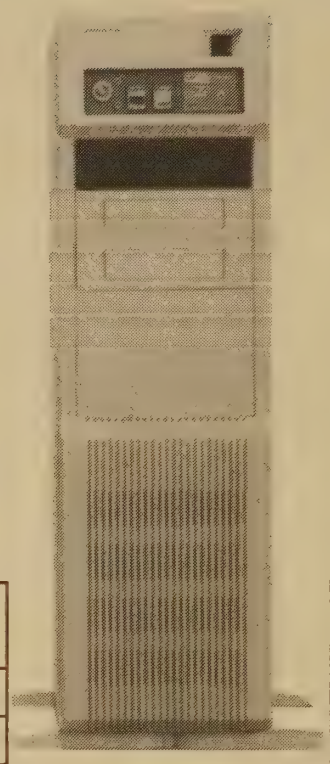

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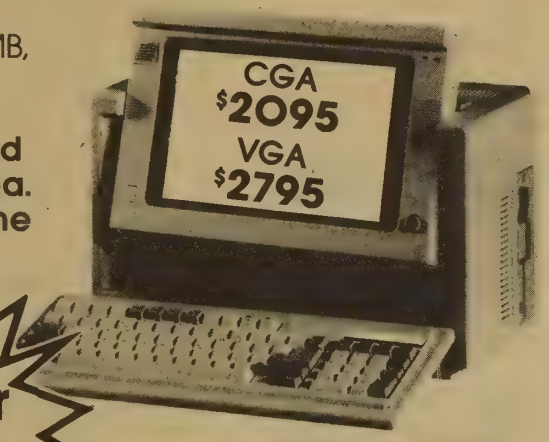

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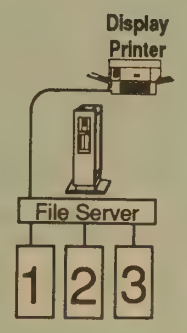

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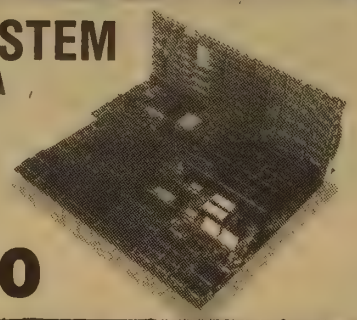

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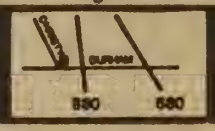

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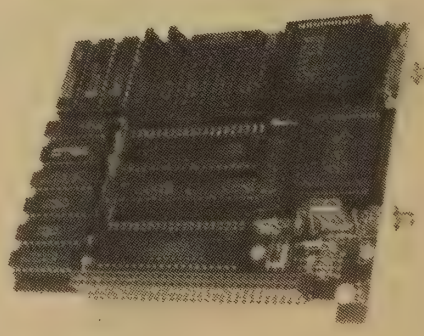

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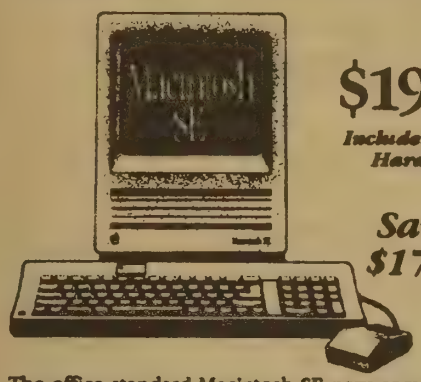

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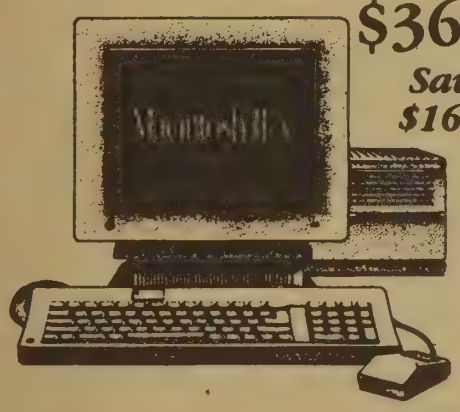

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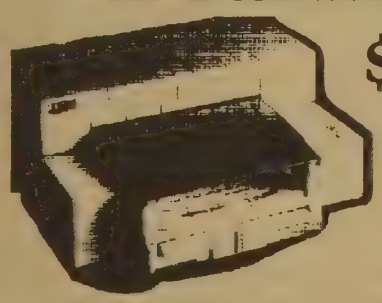

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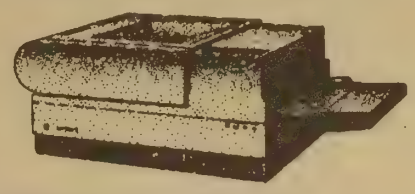

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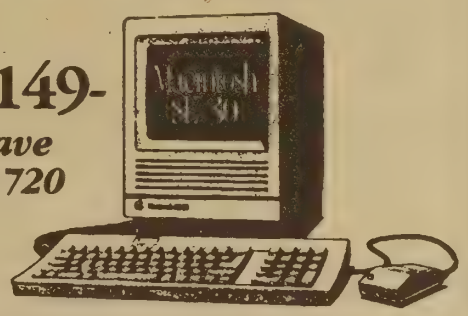

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April 12 IBM Technical SIG. Santa Clara. Software Entrepreneurs' Forum. Call: (408)244-6826.

April 14 De Anza Computer Mart. Cupertino. De Anza College. Call: (408)864-8581.

April 14 East-West Computer Show & Sale. Vallejo. East-West Shows. Call: (415)388-8893.

April 16–18 Animator Seminar. San Francisco. San Francisco State University Extended Education. Call: (415)338-1205.

April 16 Using X Windows Class. Berkeley. Lurnix. Call: 1-800-433-9338.

April 17–20 Computer Graphics: Software Techniques & Hardware Components Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

April 17–18 X Windows Programming I Class. Berkeley. Lurnix. Call: 1-800-433-9338.

April 17–18 ARCNET Show And Seminars. San Francisco. Nishi Enterprises, Inc. Call: Pauline Nishi, (708)682-3113.

April 18 Word Perfect 5.1 Level 1 Class. San Francisco. PC Etcetera. Call: Lee Van Sluyters, 1-800-323-1886.

April 18 Microsoft Works Course. San Francisco. Training Works. Call: (415)243-0100.

April 19 Paradox 3.0 Level 1 Class. San Francisco. PC Etcetera. Call: Lee Van Sluyters, 1-800-323-1886.

April 19–20 X Windows Programming II Class. Berkeley. Lurnix. Call: 1-800-433-9338.

April 19 Computer Dreams—Featuring Amanda Pays Lecture. San Francisco. University of San Francisco. Call: (415)666-6530.

April 19 Hypercard: An Educational Construction Kit For Elementary Students (Speaker). Oakland. Mills College. Call: (415)430-2144.

April 19 Founding A Software Company—How To Do It Right Seminar. Palo Alto. Software Entrepreneurs' Forum. Call: Barbara Cass, (415)845-7219.

April 19 Microsoft Project Course. San Francisco. Training Works. Call: (415)243-0100.

April 19 Pen Interface And Handwriting Recognition Conference. Santa Clara. Grid Systems Corporation. Call: Leilani Ribardo, (415)656-4700.

April 19 SEF Meeting. Palo Alto. Software Entrepreneurs' Forum. Call: (415)854-7219.

April 20 Multimate Advantage II Session I Course. San Francisco. Training Works. Call: (415)243-0100.

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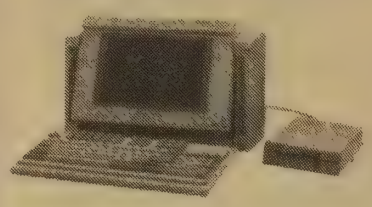

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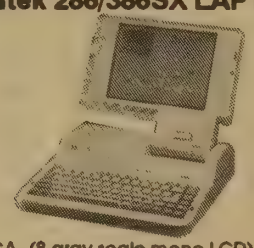

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April 21 WordPerfect 5.0 Course. San Francisco. Training Works. Call: (415)243-0100.

April 21 Lotus 1-2-3 Course. San Francisco. Training Works. Call: (415)243-0100.

April 23–25 3D Features/Release 10, Level II Seminar. San Francisco. San Francisco State University Extended Education. Call: (415)338-1205.

April 23–24 Using UNIX Power Utilities Class. Berkeley. Lurnix. Call: 1-800-433-9338.

April 23 Hard Disk Management Course. San Francisco. Training Works. Call: (415)243-0100.

April 24 Lotus 1-2-3 Release 2.2 Level 1 Class. San Francisco. PC Etcetera. Call: Lee Van Sluyters, 1-800-323-1886.

April 25 Macintosh Excel Level 1 Class. San Francisco. PC Etcetera. Call: Lee Van Sluyters, 1-800-323-1886.

April 25–26 Shell Programming Class. Berkeley. Lurnix. Call: 1-800-433-9338.

April 25 Advanced DOS Course. San Francisco. Training Works. Call: (415)243-0100.

April 25 Lotus 1-2-3 Database Course. San Francisco. Training Works. Call: (415)243-0100.

April 26 How Are Object Languages Implemented? Lecture. San Francisco. University of San Francisco. Call: (415)666-6530.

April 26 Excel For The Macintosh Course. San Francisco. Computer Alliance. Call: (415)771-1671.

April 26 Introduction to Adobe Illustrator 88 Course. San Francisco. Computer Alliance. Call: (415)771-1671.

April 26 Marketing SIG. Palo Alto. Software Entrepreneurs' Forum. Call: (415)968-8888.

April 29–May 2 International Paradox Users Conference. Monterey. Borland International. Call: (408)439-1622.

April 30–May 1 Concepts in System Operation Class. Berkeley. Lurnix. Call: 1-800-433-9338.

April 30 Intro To PC And DOS Course. San Francisco. Training Works. Call: (415)243-0100.

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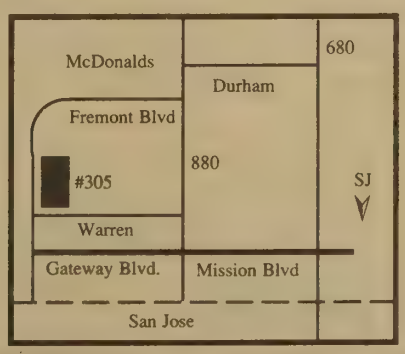

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May 3 Multimedia Composition Lecture. San Francisco. University of San Francisco. Call: (415)666-6530.

May 3 Beginning Filemaker II Course. San Francisco. Computer Alliance. Call: (415)771-1671.

May 4 Computer Design (Course) Program. San Francisco. Platt College. Call: (415)495-4000.

May 5 Introduction To Graphics Course. San Francisco. Computer Alliance. Call: (415)771-1671.

May 6–10 Mass Storage Systems Symposium. Monterey. IEEE Call: Bernard T. O'Lear, (303)497-1268.

May 6–10 Research In Security & Privacy Symposium. Oakland. IEEE. Call: Deborah Downs, (213)336-6337.

May 7–9 The Three Rs Of Software Automation: Reengineering, Repositories, Reusability. San Francisco. Extended Intelligence, Inc. Call: Dr. Carma McClure, (312)372-7762.

May 7–8 Fundamentals Of UNIX Class. Berkeley. Lurnix. Call: 1-800-433-9338.

May 7 Producing Your Newsletter On The Mac Course. San Francisco. Computer Alliance. Call: (415)771-1671.

May 7 Intermediate Macintosh Course. San Francisco. Computer Alliance. Call: (415)771-1671.

May 8 IBM New Products Presentation. San Francisco. IICS. Call: (408)866-7941.

May 9–11 Color Hard Copy: Conference And Exposition. Monterey. BIS CAP International. Call: Kathy Greeley, (617)893-9130.

May 9–10 Intermediate UNIX Class. Berkeley. Lurnix. Call: 1-800-433-9338.

May 9 How To Automate Your Business Accounting System Seminar. San Francisco. J.C. Lukrich & Co. Call: Suzette, (415)864-6770.

May 9 UNIX Business Tips. Sunnyvale. SVNet. Call: Ralph Baker, (408)986-8840.

May 9 Introduction To Adobe Illustrator 88 Course. San Francisco. Computer Alliance. Call: (415)771-1671.

May 9 Microsoft Word, Part I Course. San Francisco. Computer Alliance. Call: (415)771-1671.

May 10 The Effects Of Computer Models On Global Warming Regional Environmental Policy In East Africa (Speaker). Oakland. Mills College. Call: (415)430-2144.

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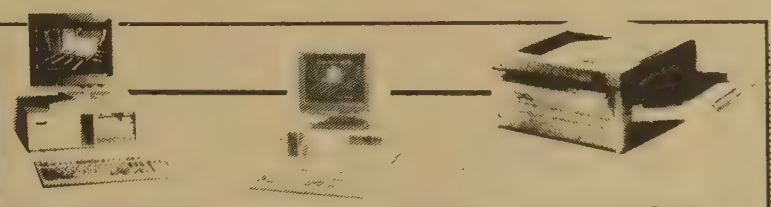

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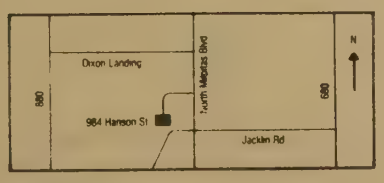

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Computer Systems Price Matrix	No Monitor/Card Included	Mono (12") 720 x 350 1 Color	Mono (14") 720 x 350 1 Color	Mono VGA 720 x 400 64 Shades	VGA 720 x 400 256 Colors	SYNC 800 x 600 256 Colors	HIRES 1024 x 768 256 Colors
286/12 (512 KB)							
Basic System	$499	$599	$649	$724	$999	$1,124	$1,249
w/20 MB Hard Disk (65 ms/MFM)	$699	$799	$849	$924	$1,199	$1,324	$1,449
w/42 MB Hard Disk (39 ms/MFM)	$809	$909	$959	$1,034	$1,309	$1,434	$1,559
w/65 MB Hard Disk (25 ms/MFM)	$899	$999	$1,049	$1,124	$1,399	$1,524	$1,649
386/16SX (1 MB)							
Basic System	$849	$949	$999	$1,074	$1,349	$1,474	$1,599
w/42 MB Hard Disk (28 ms/MFM)	$1,169	$1,269	$1,319	$1,394	$1,669	$1,794	$1,919
w/65 MB Hard Disk (28 ms/RLL)	$1,249	$1,349	$1,399	$1,474	$1,749	$1,874	$1,999
w/80 MB Hard Disk (25 ms/MFM)	$1,419	$1,519	$1,569	$1,644	$1,919	$2,044	$2,169
386/20 (1 MB)							
Basic System	$1,099	$1,199	$1,249	$1,324	$1,599	$1,724	$1,849
w/42 MB Hard Disk (28 ms/MFM)	$1,419	$1,519	$1,569	$1,644	$1,919	$2,044	$2,169
w/65 MB Hard Disk (25 ms/RLL)	$1,499	$1,599	$1,649	$1,724	$1,999	$2,124	$2,249
w/80 MB Hard Disk (28 ms/MFM)	$1,669	$1,769	$1,819	$1,894	$2,169	$2,294	$2,419
w/100 MB Hard Disk (17 ms/ESDI)	$2,199	$2,299	$2,349	$2,424	$2,699	$2,824	$2,949
w/150 MB Hard Disk (17 ms/ESDI)	$2,399	$2,499	$2,549	$2,624	$2,899	$3,024	$3,149
386/25 (1 MB)							
Basic System	$1,299	$1,399	$1,449	$1,524	$1,799	$1,924	$2,049
w/42 MB Hard Disk (28 ms/MFM)	$1,619	$1,719	$1,769	$1,844	$2,119	$2,244	$2,369
w/65 MB Hard Disk (25 ms/RLL)	$1,699	$1,799	$1,849	$1,924	$2,199	$2,324	$2,449
w/80 MB Hard Disk (28 ms/MFM)	$1,869	$1,969	$2,019	$2,094	$2,369	$2,494	$2,619
w/100 MB Hard Disk (17 ms/ESDI)	$2,399	$2,499	$2,549	$2,624	$2,899	$3,024	$3,149
w/150 MB Hard Disk (17 ms/ESDI)	$2,599	$2,699	$2,749	$2,824	$3,099	$3,224	$3,349
386/25C (1 MB)							
Basic System	$1,599	$1,699	$1,749	$1,824	$2,099	$2,224	$2,349
w/42 MB Hard Disk (28 ms/MFM)	$1,919	$2,019	$2,069	$2,144	$2,419	$2,544	$2,669
w/65 MB Hard Disk (25 ms/RLL)	$1,999	$2,099	$2,149	$2,224	$2,499	$2,624	$2,749
w/80 MB Hard Disk (28 ms/MFM)	$2,169	$2,269	$2,319	$2,394	$2,669	$2,794	$2,919
w/100 MB Hard Disk (17 ms/ESDI)	$2,699	$2,799	$2,849	$2,924	$3,199	$3,324	$3,449
w/150 MB Hard Disk (17 ms/ESDI)	$2,899	$2,999	$3,049	$3,124	$3,399	$3,524	$3,649

386/33C Price Matrix	No Monitor/Card Included	VGA 720 x 400 256 Colors	SYNC 800 x 600 256 Colors	NEC 2A 800 x 600 256 Colors	HIRES (14") 1024 x 768 256 Colors	HIRES (16") 1024 x 768 256 Colors	HIRES (20") 1024 x 768 256 Colors
386/33C (1 MB)							
Basic System	$2,099	$2,599	$2,724	$2,824	$2,849	$3,449	$4,899
w/42 MB Hard Disk (28 ms/MFM)	$2,419	$2,919	$3,044	$3,144	$3,169	$3,769	$5,219
w/65 MB Hard Disk (25 ms/RLL)	$2,499	$2,999	$3,124	$3,224	$3,249	$3,849	$5,299
w/80 MB Hard Disk (28 ms/MFM)	$2,669	$3,169	$3,294	$3,394	$3,419	$4,019	$5,469
w/100 MB Hard Disk (17 ms/ESDI)	$3,199	$3,699	$3,824	$3,924	$3,949	$4,549	$5,999
w/150 MB Hard Disk (17 ms/ESDI)	$3,399	$3,899	$4,024	$4,124	$4,149	$4,749	$6,199
w/340 MB Hard Disk (17 ms/ESDI)	$4,199	$4,699	$4,824	$4,924	$4,949	$5,549	$6,999

Note: Maximum resolution & colors reflected in video specifications./All Monitors measure 14" diagonally unless otherwise noted.

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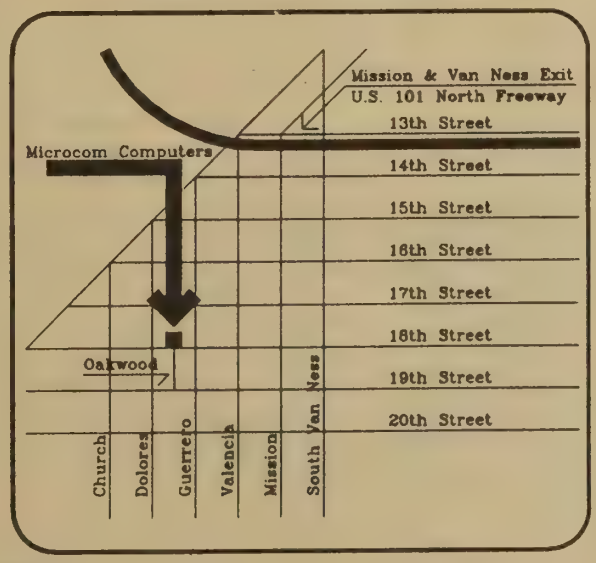

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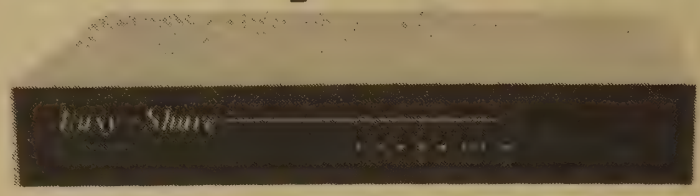

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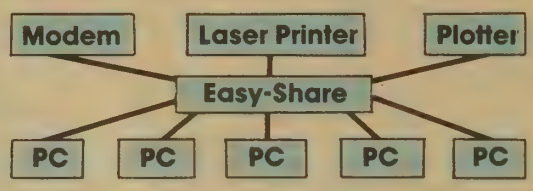

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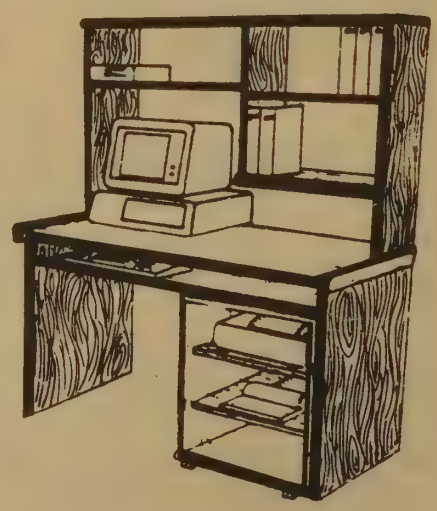

CALENDAR OF EVENTS *continued*

May 10 Basic Macintosh 2, Word Proc. & Graphics Course. San Francisco. Computer Alliance. Call: (415)771-1671.

May 12 De Anza Computer Mart. Cupertino. De Anza College. Call: (408)864-8581.

May 14 Using X Windows Class. Berkeley. Lurnix. Call: 1-800-433-9338.

May 15 Apple II/Mac Computer Swap. Sacramento. Call: (916)752-0228.

May 15–16 X Windows Programming I Course. Berkeley. Lurnix. Call: 1-800-433-9338.

May 15 Introduction To Hypercard Course. San Francisco. Computer Alliance. Call: (415)771-1671.

May 16 Microsoft Word, Part II Course. San Francisco. Computer Alliance. Call: (415)771-1671.

May 16 PageMaker, Part I Course. San Francisco. Computer Alliance. Call: (415)771-1671.

May 17–18 X Windows Programming II Class. Berkeley. Lurnix. Call: 1-800-433-9338.

May 19 Excel For The Macintosh Course. San Francisco. Computer Alliance. Call: (415)771-1671.

May 19 Hypercard II Course. San Francisco. Computer Alliance. Call: (415)771-1671.

May 21–22 Using Network Class. Berkeley. Lurnix. Call: 1-800-433-9338.

May 22–25 Distributed Databases: Design, Implementation & Management Course. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421–8166.

May 23–24 Network System Administration Class. Berkeley. Lurnix. Call: 1-800-433-9338.

May 23 Microsoft Word, Part I Course. San Francisco. Computer Alliance. Call: (415)771-1671.

May 24 Microsoft Word, Part II Course. San Francisco. Computer Alliance. Call: (415)771-1671.

May 29–30 Concepts In System Operation Class. Berkeley. Lurnix. Call: 1-800-433-9338.

May 30 Intermediate Macintosh Course. San Francisco. Computer Alliance. Call: (415)771-1671.

May 31–June 1 System Administration Class. Berkeley. Lurnix. Call: 1-800-433-9338.

May 31 PageMaker, Part II Course. San Francisco. Computer Alliance. Call: (415)771-1671.

June 2–4 ShowBiz Expo. Los Angeles. Live Time. Call: (213)668-1811.

June 3–7 Infocom '90 Conference. San Francisco. IEEE. Call: (202)371-1013.

June 4–5 Fundamentals Of UNIX Class. Berkeley. Lurnix. Call: 1-800-433-9338.

June 4–6 SCOOP East '90: Object-Oriented Programming Seminars And Conference. Boston. Wang Institute. Call: (508)649-9731.

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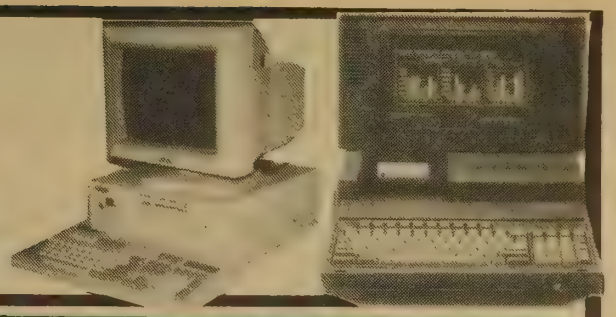

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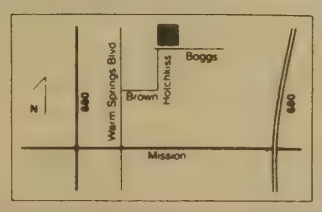

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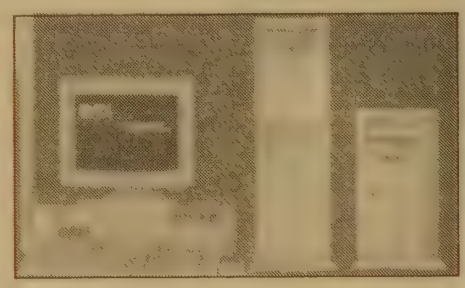

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June 11 Using X Windows Class. Berkeley. Lurnix. Call: 1-800-433-9338.

June 12–15 Software Requirements & Design Specifications Course. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

June 12 In–House Training Presentation. Cupertino. IICS. Call: (408)866-7941.

June 12–13 X Windows Programming I Class. Berkeley. Lurnix. Call: 1-800-433-9338.

June 13 Transaction Processing. Sunnyvale. SVNet. Call: Ralph Baker, (408)986-8840.

June 14–15 X Windows Programming II Class. Berkeley. Lurnix. Call: 1-800-433-9338.

June 16 De Anza College Computer Mart. Cupertino. De Anza College. Call: (408)864-8350.

June 18–19 Concepts In System Operation Class. Berkeley. Lurnix. Call: 1-800-433-9338.

June 18–20 Image Processing Technology Conference. Boston. Wang Institute. Call: (508)649-9731.

June 19–22 SQL: A Hands-On Workshop Course. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

June 19–22 Hands-On Datacomm And Networks Course. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

June 19–21 Eighth Annual PC Expo. New York. H.A. Bruno, Inc. Call: Mark A. Haviland, 1-800-444-3976.

June 20–21 System Administration Class. Berkeley. Lurnix. Call: 1-800-433-9338.

June 25–28 Advanced C Programming Class. Berkeley. Lurnix. Call: 1-800-433-9338.

June 25–26 System Administration Class. Berkeley. Lurnix. Call: 1-800-433-9338.

July 9–10 Fundamentals Of UNIX Class. Berkeley. Lurnix. Call: 1-800-433-9338.

July 10 Basics To Interactive Media Presentation. San Francisco. IICS. Call: (408)866-7941.

July 11–13 Dynamic 3-D Computer Graphic Systems For Industrial Design Conference And Exposition. Monterey. BIS CAP International. Call: Kathy Greeley, (617) 893-9130.

July 11–12 Intermediate UNIX Class. Berkeley. Lurnix. Call: 1-800-433-9338.

July 14 De Anza Computer Mart. Cupertino. De Anza College. Call: (408)864-8350.

As a community service, MicroTimes lists trade shows, seminars, and other special events in the Calendar of Events free of charge on a space-available basis. To improve the likelihood of your listing's timely inclusion, please make sure we have the necessary information no later than the first of the month, two months before the coverdate of the issue in which you'd like it to appear (i.e., the deadline for the March issue, distributed during February, is January 1). Send to: MicroTimes Calendar of Events, 5951 Canning St., Oakland, CA 94609.

News about user group meetings and other regularly scheduled activities should be sent to User Group Network at the same address.

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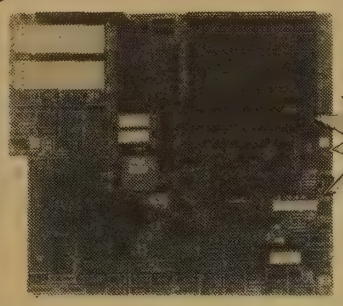

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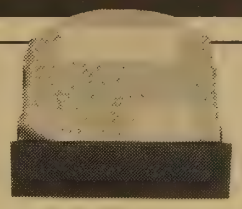

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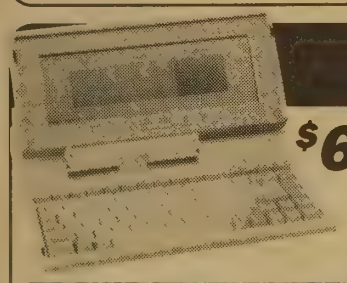

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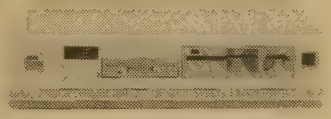

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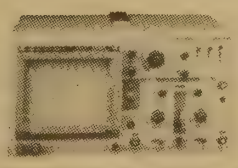

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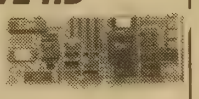

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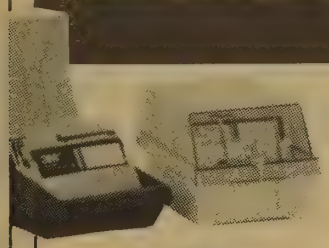

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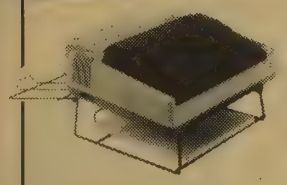

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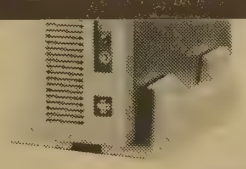

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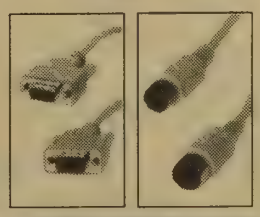

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IBM's System 6000 Workstations 36

Paul Hoffman is an industry analyst who has been covering microcomputer technology for ten years. He can be reached on USENET (phoffman@well) and MCI Mail (264-3171). He also writes popular microcomputer books.

Adobe Secures Font Patent; SPA Fights Piracy; IBM Announces RISC Workstation To Mixed Reviews

Adobe Receives Patent For Computer Font

In an interesting end-run around the U.S. Copyright Office, Adobe received the first copyright registration for a computer typeface by copyrighting it as a program. The Copyright Office had steadfastly refused to grant copyrights to computer-generated fonts or typefaces, on the grounds that they were not copyrightable since the design of the font was a collection of data. Adobe was able to show that since PostScript and other outline-only fonts were programs that had to be run in order for the font to be displayed or printed, it could be protected as a program.

Adobe was helped by its competitors such as Bitstream, who worried that they would not be able to protect the works that they sold.

The difference between the font and its underlying program is subtle but important. Screen-only fonts will still be unregisterable, according to the Copyright Office, unless they are generated on the screen by a discernible program. Most fonts for most computers are simply maps of the pixels that should be turned off or on, and are therefore not program-based. Any font that requires a program to form the font, not to simply display it, would probably be copyrightable.

The successful registration was for the single font (ITC Garamond), but it's likely that Adobe and others will immediately apply for all the fonts that they have created to date. Of course, the registration applications will not be for the fonts themselves but for the underlying programs.

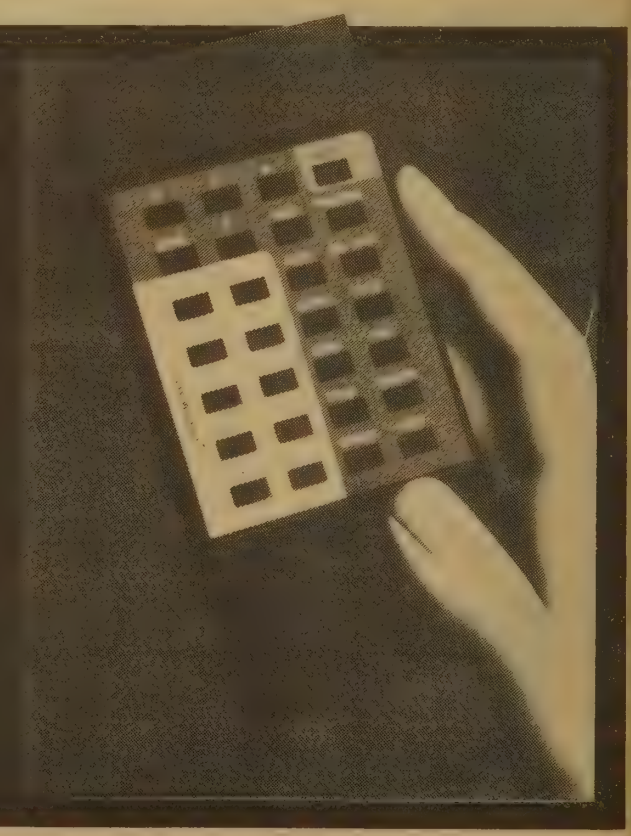
One lawyer predicted that the copyright notice on fonts in the future will change significantly. Apple expressed satisfaction with the registration, since the same principle used in Adobe's case would certainly be used in the fonts that Apple is releasing this year in the so-called "Royal" format. "Royal" fonts will also be used by Microsoft and IBM in future versions of OS/2.

Ron Friedman, president of Bitstream, com-

Press Release Of The Month

Computer Support Corporation sent out a wonderful announcement for their new "On-Command" remote control hardware for the Macintosh. The $295 device is meant to allow people giving Macintosh-based presentations to avoid having to stand near the Mac.

As you can see from the picture, however, people aren't the only things that can use the device. In what might be a comment on how boring many computer-aided presentations can be, CSC shows how even a mannequin (or a human with a plastic hand) can use their device.



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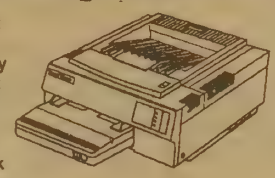

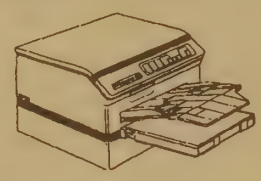

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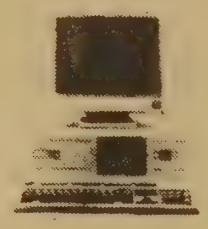

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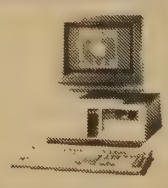

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NEWS AND ANALYSIS

mented: "As a manufacturer of typeface programs, we are very pleased by this development. In fact, we worked closely with Adobe to obtain this clarification in copyright policy. Legal protection encourages manufacturers to make the significant investment needed to develop high quality font products. This, in turn, means more high quality type for end-users."

Motorola Releases 68040, Gives 80486 Serious Competition

Stealing some of Intel's thunder, Motorola announced the 68040 CPU to help bolster its position in the UNIX workstation market. The 040 is the logical successor to the 68030; many manufacturers, including Apple, NeXT, and Hewlett-Packard, will probably release machines based on the chip late this year or early next year.

If Motorola's announced test speeds are accurate, the 040 will run significantly faster than the Intel 80486 for most common applications.This should give a big boost to companies that have stuck with Motorola even as the Intel line looked like it was going to take over at the high end of the market.

If Motorola's announced test speeds are accurate, the 040 will run significantly faster than the Intel 80486 for most common applications.

The 040 has its own math processing capabilities on-chip, eliminating the need for a math coprocessor. In fact, the math in the 040 is ten times faster than the math in Motorola's own 68882 coprocessor for most calculations. This, combined with its large speed advantage over the 80486, should keep Motorola solidly in the lead for high-end UNIX workstations.

At the announcement, Motorola stressed that the 040 is completely compatible with earlier chips, so that applications software will run unmodified on the system. Motorola added many enhancements that will allow operating system writers greater flexibility in fine-tuning performance for different environments, but the normal "user" mode remains identical to earlier chips.

This ability to change the operating system level of the 040 ensures that those programs will run even faster than expected, since the programmers can pick and choose which of the new features to implement. Apple says that the Macintosh operating

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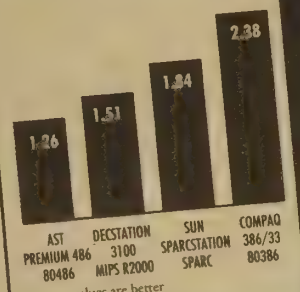

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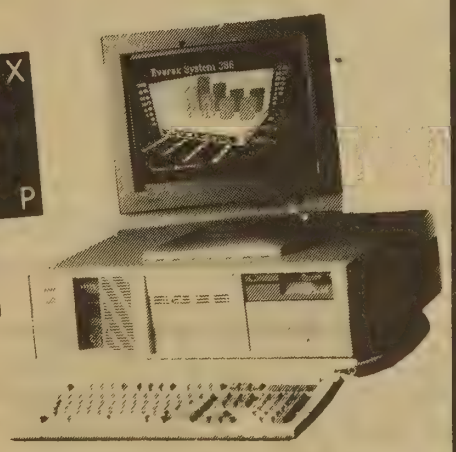

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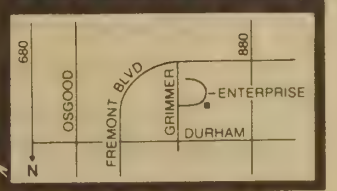

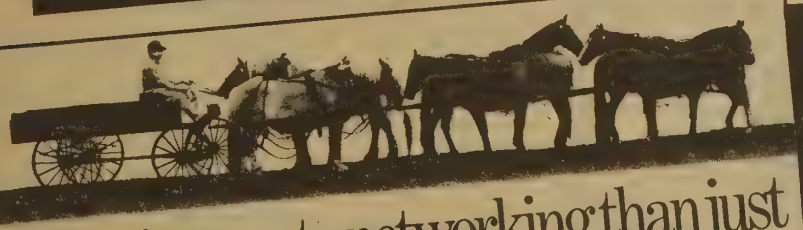

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NEWS AND ANALYSIS

system will be able to take full advantage of the new features and that it expects to release an 040-based Mac as soon as there is a good supply of chips.

Motorola will also be giving other CPU manufacturers a run by pricing the 040 fairly low relative to other CPUs. For example, the announced $800 price tag on the 040 is lower than the $950 for the 80486 or approximately $1700 for SPARC chips from various manufacturers. This should help lower the price of systems that use the 040.

Worried About Piracy At Your Company? A "Software Self-Audit" Might Help

Everyone knows that copying software for use on more than one system is against the law. To help drive that point home in the past few years, the Software Publishers Association has begun singling out companies where piracy is rampant and bringing lawsuits against them. (I apologize to those of you who thought that you would get through a whole month of the news without having to think about lawyers.)

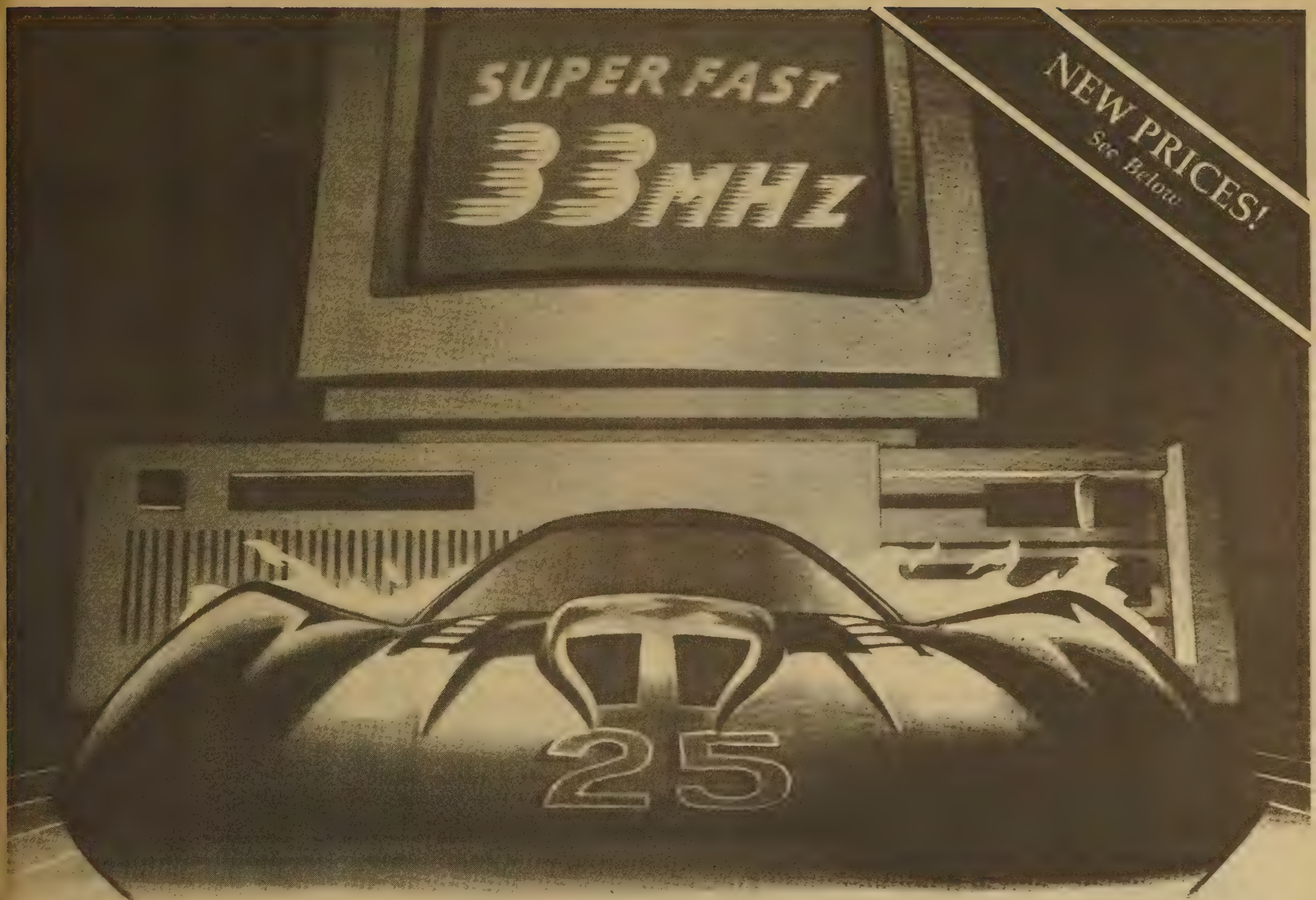
Now, the SPA is helping prevent such embarrassing moments by sending out a software self-audit kit to anyone who wants one. The idea behind the self-audit is to help companies recognize that they have a piracy problem and deal with it internally. The SPA hopes that this tactic helps get companies to voluntarily comply with both the spirit and letter of the law.

If you are concerned about piracy at your company, write for your free self-audit packet to: Software Publishers Association, 1101 Connecticut Avenue NW, Suite 901, Washington, DC 20036; 202/452-1600.

Missing The Point: The Press And IBM's New Workstations

If you listen to the computer press, you would think that IBM's new System 6000 line of workstations was an important new product. For almost a month before the announcement, magazines talked about how this would be IBM's first "real" attempt to win the workstation market and that the systems would be attractive to engineers and other "power users."

Unfortunately, this is an example of the press again falling for IBM's marketing of what will most likely be another red herring in the IBM product line. The new line of RISC-based systems is just



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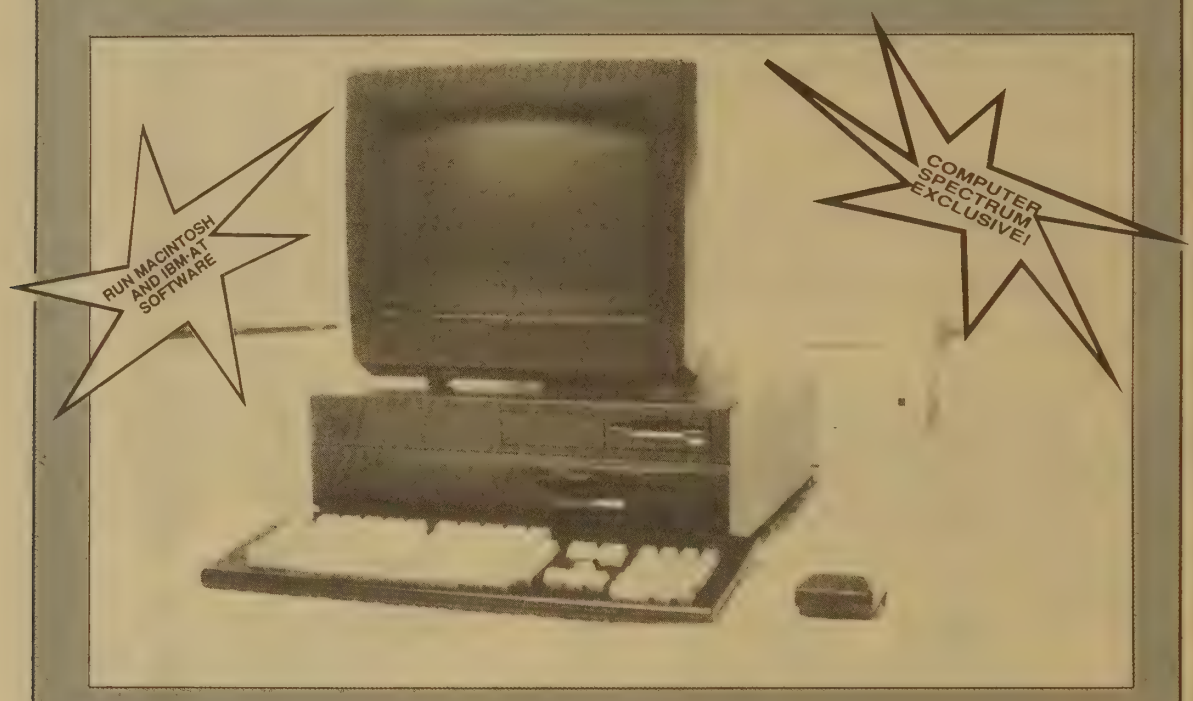

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NEWS AND ANALYSIS

another workstation. That is not to say that they are not powerful or impressive; however, they are also late, expensive, and lack a stable base of software to help sell them.

Anyone who thinks that whatever IBM makes can take over a market should look at the latest projections of the percentage of the PC market IBM owns. Simply entering the market does not assure IBM of anything.

Anyone who thinks that whatever IBM makes can take over a market should look at the latest projections of the percentage of the PC market IBM owns. Simply entering the market does not assure IBM of anything.

Worse yet, much of the press has forgotten that this is not IBM's first foray into the workstation field. The IBM RT was an unmitigated disaster for both IBM and anyone who bought it. There is almost no application software for the RT; IBM never did much with the operating system, and almost no one came out with usable peripherals for the system. Even though these points were missed by the computer press, they are well remembered by anyone who wanted a workstation and decided to buy from IBM based on the specs and on IBM's name.

To its credit, IBM made some very good choices in the design of the system. Probably the system's most notable feature is that it uses the MCA bus so that the system works with any MCA-based peripherals and memory cards. The higher-end models sport fast color graphics and will be able to communicate with many common graphics standards.

The specs for the System/6000 make it clear that IBM is aiming it at the federal market, the most lucrative market for UNIX workstations. The new systems meet most of the common current requirements for UNIX systems, such as error-correcting memory.

Most military contracts are worded so that only a single supplier could possibly win; IBM added enough technology to these systems that someone could conceivably write a reasonable-looking specification that could only be met by the System/6000. A typical example of this might be a contract that requires both RISC and a fast industry-standard bus.

Two major issues are left unresolved, however:

•Since the various models cost almost twice as much as competitive models from manufacturers such as Sun, Hewlett-Packard, and DEC, who will want to be the pioneers with these systems? Although IBM seeded many software companies with

continued on page 118

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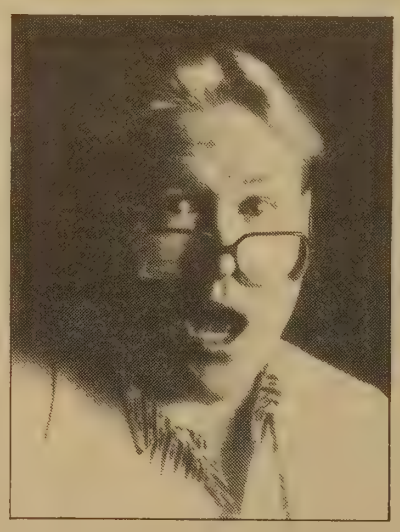

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NEWS AND ANALYSIS

early versions so that those companies would port their products to IBM's AIX version of UNIX, few of those companies were ready at the announcement.

To make matters worse, many of the companies only ported the character-based versions of their programs to the 6000 series, making the graphics workstations even less desirable.

•How committed is IBM to the workstation market? The week before the System/6000 announcement, IBM added a new layer to the bottom end of its 370 mainframe line. The new ES/9370 models 10, 12, and 14 are probably of much more interest to IBM than anything in the System/6000 line, because the potential buyers are already true-blue IBM fans. The ES/9370 line lets users run off-the-shelf 370 software, since the systems run the VM operating

The specs for the System/6000 make it clear that IBM is aiming it at the federal market, the most lucrative market for UNIX workstations. A typical example of this might be a contract that requires both RISC and a fast industry-standard bus.

system. In addition, these systems also sport MCA slots, so that you can attach standard PC peripherals to them without having to use complicated networking.

Of course, VM is not UNIX, and many potential buyers of the System/6000 would never consider buying a scaled-down mainframe with a proprietary operating system. However, they also wouldn't consider buying a system whose software base is almost as limited as the NeXT machine's and whose operating system rivaled NeXT's for being so late.

IBM is banking on the federal market and sales to established IBM shops for at least the first few years. This could be enough to keep the system afloat and to garner enough software support to bring in other users—but that's what IBM hoped for the RT.

In the end, it is clear that the System/6000 is a powerful machine at a high price. Other manufacturers have been able to get a foothold in the UNIX market with similar machines, although usually in niches that had no competition when the systems were introduced. IBM must hope that it can also find such niches (such as being the only MCA-based RISC system) to overcome its sour history in the workstation market. ■

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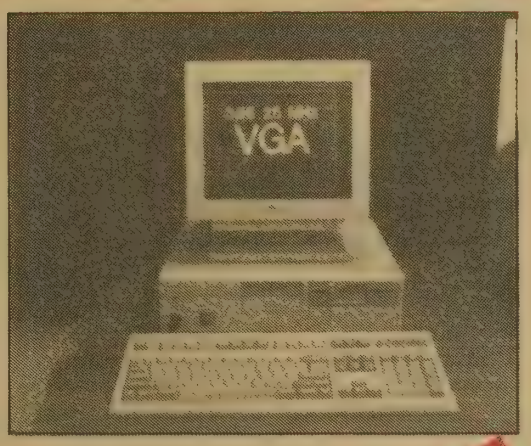

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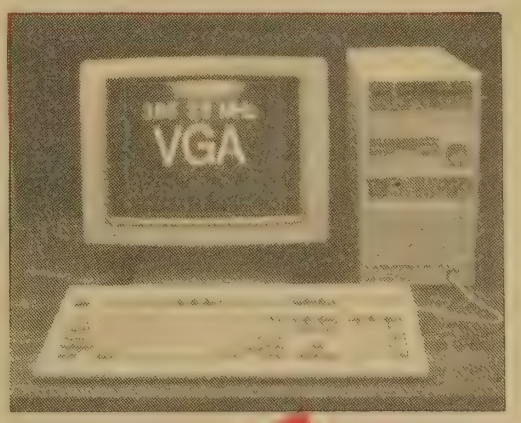

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The news entertainers—uh, *announcers*—said little about the technology (begun in England, almost 20 years ago). In the L.A. (Ch. 46) and San Francisco (Ch. 36) areas, **digital data for mass public use** is being transmitted in the vertical-retrace interval (an unseen part of a TV signal) without affecting the regular TV shows. The data encodes text and mosaic-graphics.

It includes business and world news, weather, ski data (seasonal), sports info, medical news, EPA and FEMA stuff, and much more. This is its first real push into mass public use in California—allowing endless alternatives for hackers and entrepreneurs.

Get a receiver (cheap) for your computer, and help create our futures. (Teletext Communications, 31902 Hayman St., Hayward, CA 94544; 415-429-8398.)

Fixing The Vaporware Problem

All but the most naively new computer users know of vaporware—exciting new "products," announced but unavailable. Their promoters' cliché: "We won't ship until the product is absolutely solid." *Hah!* [he snorts]. If we can't get it, it's not a "product."

There *are* examples of companies exercising the ethical fortitude of withholding product announcements until they actually have 'em. E.g., when Borland announced Turbo Pascal 5.5 with OOP extensions (object-oriented programming)—*hot dang!*—they distributed a six-foot high stack of *real*-ware, on the spot. When DigiFont announced super-cheap LaserJet font packages—by golly—they shipped 'em, literally, the next day.

Reasonable Forewarning Is Not The Problem

Announcing new products a month or two before availability *is* justified. Potential customers need to know of impending obsolescence, and need to know update costs. Also: announcements by unknown or tiny companies are usually not the problem.

Unethical Bombing Raids

The problem comes when the announcement is by a major, "reputable" producer, deterring purchase of *real* alternatives already available from competitors.

There are entirely too many "preemptive strikes" by industry super-powers. With great fanfare, they announce powerful new products, and then fail to deliver for a year—or several years. They confuse customers, bombing users and competitors with false claims.

It is outrageous. It harms everyone concerned. It is no longer to be tolerated. And we in the trade press can best address the solution.

The key is the reputation of the companies that announce unavailable products.

A Pressing Proposal: Publicize Delivery Histories

A responsible trade press can adopt this editorial policy:

Reporting of new product announcements will *begin* by stating projected delivery dates *and* will include summaries of that producer's delivery record for previously pre-announced un-products. Those who have a pattern of timely delivery earn a good reputation. Those announcing vaporware earn an equally justified reputation. *Let the readers be informed!*

E.g., in the 1960s, IBM was so many *years* late in delivering some long-promised 360 mainframe models, that Congress held hearings on the problem.

E.g., fake window-ware—*still*-unavailable capabilities, announced *years* ago—confused users, unjustly harmed competitors and illegitimately delayed purchases of *real* products from *reputable* suppliers.

Readers: Request and watch for this editorial practice in the trade rags you trust—and let your suppliers know you're watching.

Reputable vendors (*i.e.*, most of the industry): Demand this editorial policy where you spend your advertising bucks. It protects *you* against competitors' preemptive strikes.

This only works if the industry knows about it. Publicize the policy in a legible sidebar on editorial pages, several times, annually. And, it would help to editorially praise prompt producers periodically, by name. (I do.)

Human-Readable Diskettes

Fantasies for program publishers—about software sold on 3-1/2" diskettes:

There are entirely too many "preemptive strikes" by industry super-powers. With great fanfare, they announce powerful new products, and then fail to deliver for a year—or several years. They confuse customers, bombing users and competitors with false claims.

Use labels with white or light background colors—so we can add our own notes. State recording format and density on preprinted labels.

Include the product's *exact* version number on the serial-number label. E.g., mass-printed labels say it's ThingaMajig 2.0, but this week's copies are 2.0.7; thus, have "v. 2.0.7" included on their serial-number labels. Stick serial number labels on the disk and registration card—or at least include 'em in the product pack. Use only one serial number; not three or four.

Print product identity on the *edge* of diskettes, as well as on the front (e.g., T/Maker and Symantec diskettes). When a software product requires several diskettes, edge-labels should identify which is which, just like the face-labels.

But—an edge-label design problem: If they are rightside-up, when the face-label is visible (i.e., in the storage box), then they're upside-down in the disk-drive (but often not visible). Personally, I want to edge-read it in the storage box more than in the disk-drive. But it appears that the software producers thoughtful enough to print edge-labels have adopted the opposite practice.

Ah hah! The solution's simple: install the diskette drives upside-down! (I'm joking! I'm joking?)

Help Make Improvements

Clip this and send it to your most/least favorite periodicals and computer companies. We need "informed consent" regarding vaporware. And diskette ergonomics—already available from really *good* companies—make life *so* much better for us poor struggling computer hackers. (Aren't you glad X Corp uses this? Don't you wish everyone did?)

Standing On Shoulders, Rather Than Toes

Share fantasies with Jim Warren, Realizable Fantasies, 345 Swett Road, Woodside, CA 94062. Published proposals will be attributed to their authors unless anonymity is requested. ■

Copyright © 1990 by Jim Warren. All rights reserved. *Jim Warren founded* InfoWorld, *the DataCast proposal for broadcast-based paperless electronic newspapers, Video Initiative, Wireless Digital, Initiative, Inc. and the nation's largest public microcomputer convention. He was founding host of PBS television's "Computer Chronicles" series, founding editor of* Dr. Dobb's Journal, *founding President of the Microcomputer Industry Trade Association and has chaired various computer professionals' organizations. He holds graduate degrees in computing (Stanford), medical information science (UC Medical Center), and mathematics.*

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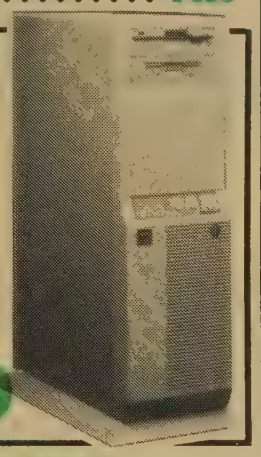

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Networking The Mac Office

The First Step: Sharing A Printer

From A Recent WELL Posting:

We have four Macs (two SE's and one IIcx) in four rooms, and one LaserWriter II in a room with the IIcx. We need to run cables through the walls. No one was able to recommend a reliable cabling place, so I pulled four names out of the Yellow Pages.

It was fun getting these quotes, because each company that came out gave me a different line about what needed to be done. Out of four places, one gave me the $650 quote and seemed really with it—they're going to use our telephone system and some additional cabling to do the hook-up. One place told me that what I wanted couldn't be done and that I'd need to have someplace else design a system that would work. Another guy said that he'd charge $600, but then we'd need to buy the TOPS program to make it work, and that would cost $110/copy, and of course we'd need four copies.

I'm waiting for one more quote to come back, and I'm curious to see what story these people are going to give me. I feel like calling the guy back who told me what I wanted couldn't be done (he didn't even know how to turn on a Macintosh; I don't know why they sent him) and saying "nyah nyah nyah."

BY MARY EISENHART

Your office has reached the stage where you're starting to look at networking your Macs. If you're like most users, you'll probably want to start by sharing some expensive resource, like a laser printer, among several computers.

Like the author of the WELL posting, you may be about to enter the Twilight Zone—conflicting information, wildly opposed advice, and much confusion. This series will address some issues and products to consider in setting up your Macintosh network, starting with simple matters like peripheral and file sharing and moving to more sophisticated considerations like mulitvendor networks and the like.

THE GOOD NEWS

Much emotion has been generated over the high price tag of the Macintosh. However, when you're about to network a few machines, you encounter one of the Mac's main value-added properties: a whole lot of what you need is part of every Mac package, hardware and system software. And a lot of what you do have to buy is as close to plug-and-play as current networking technology gets.

For something as simple as sharing a printer, you don't need to buy any additional software at all. It's all in the System software. And to connect the machines, you can either use Apple's own AppleTalk connectors or follow the majority of Mac networkers and go for the low-cost PhoneNet option from Farallon.

To hook up three Macs to a Fujitsu laser printer (see sidebar), we spent about $200—for four PhoneNet connectors and a goodly amount of modular phone parts at Radio Shack. And, except for some mishaps where a staple went through the phone cord, resulting in some fried parts, the network's been working fine since the middle of last year.

SETTING UP A SIMPLE NETWORK

First of all, make sure all the Macs you want to connect have all the AppleTalk software (which is included with the System software) in the System folder. You'll need it later.

We acquired four PhoneNet connectors; the type you'll need depends on what types of Macs and peripherals you're using. Each connector comes with six feet of phone wire, and attaches to either the printer or modem port of your Mac and the serial port of the printer.

Depending on various factors, including foot traffic levels and the distance between Macs, you may want to bring a professional into the process. We took the guerrilla do-it-yourself approach (take the stapled wire as a cautionary tale)—when we discovered that we needed a lot more than six feet of phone wire, we went to the local

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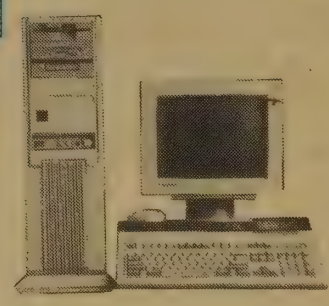

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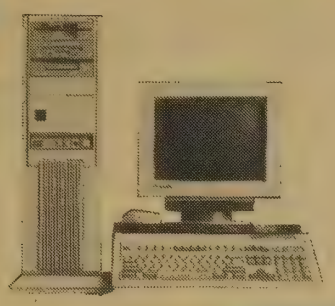

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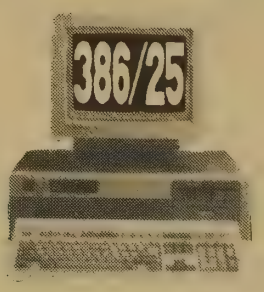

HD 386 25MHz SYSTEM 64K CACHE

LANDMARK - 38 SI - 32

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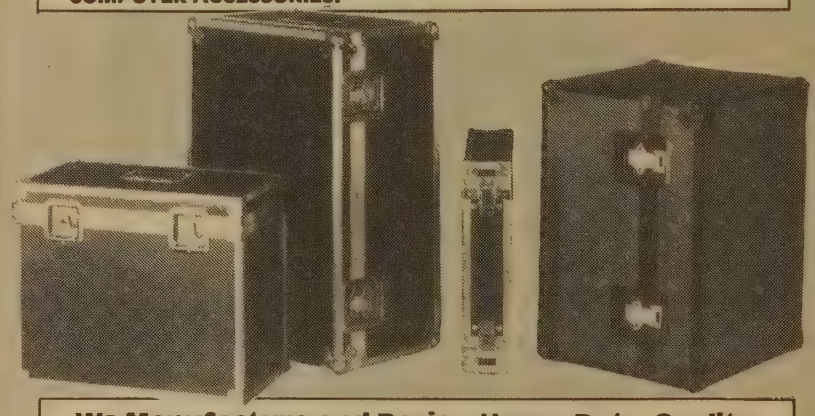

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NEXT MONTH

Once you've sent a few documents to the printer, it occurs to you that it would be very convenient to send files and messages to other users. We'll talk about QuickMail, a product that lets you do this, next month.

Radio Shack and picked up a few 20-foot cords and modular connectors. My SE/30 is connected to the Fujitsu by an inelegant kludge of one seven-foot cord and one 20-foot cord, which I run over with my chair quite frequently. You might well want something more solid, but this works just fine.

Farallon's instructions are clear and simple; once the elaborate festoons of phone wire had been stapled to the walls, it took considerably less than an hour to get everything connected to everything else.

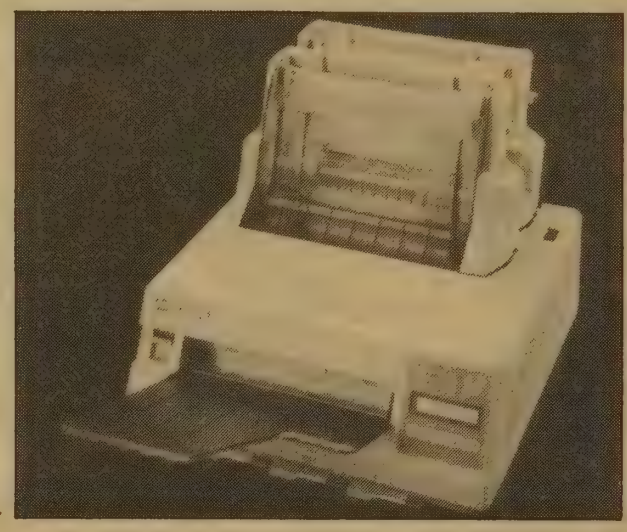
Once that's done, each Mac user on the net should make sure the proper printer drivers (e.g., AppleTalk LaserWriter, or the driver that comes with a non-Apple printer) are in each Mac's system folder. Each user should pull down the Apple menu and select the Chooser. The Chooser will ask to have a printer selected; select the appropriate one. Be sure AppleTalk is Active in the Chooser, and type in a name for your Mac in the dialog box.

Then start sending documents to the printer. (Farallon, 415/596-9100.) ■

THE FUJITSU RX7100PS PRINTER

Long a mainstay of the DOS printer world, Fujitsu introduced this PostScript-based model as its first Mac-compatible unit. In terms of speed and functionality, it's roughly comparable to a LaserWriter NT, though there are differences that may be significant in some situations.

In several months of hard use, the printer has been very reliable and apparently completely software-compatible with LaserWriters—it's printed everything we've thrown at it, PostScript or otherwise.



Unlike LaserWriters, this machine has its paper feed mechanism on top; it takes up less horizontal space but more vertical space than its Apple counterpart. One very handy design feature is the Fujitsu's standard two-paper-bin configuration, so you don't have to change paper every time you need letterhead. (The downside is that Macintosh printer drivers don't recognize the existence of two paper bins, so you have to select the bin manually from a panel on the printer.)

In our experience the vertical paper-feed mechanism was somewhat more prone to paper jams than the horizontal equivalent on LaserWriters. Also, while the LaserWriter's handling of envelopes is less than wonderful, it does print envelopes. The Fujitsu's manual cautions you against trying. We tried. It was right.

In addition to LaserWriter emulation, this printer will also emulate an HP LaserJet. It should be particularly attractive in multivendor networks, since it has both a serial and a parallel port. We'll be addressing the DOS/Mac issues in a future article. (Fujitsu America, 408/423-1300.)

—Mary Eisenhart

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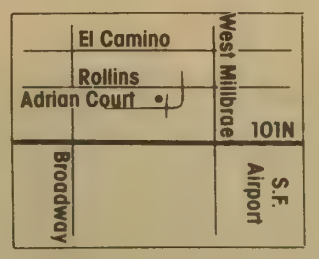

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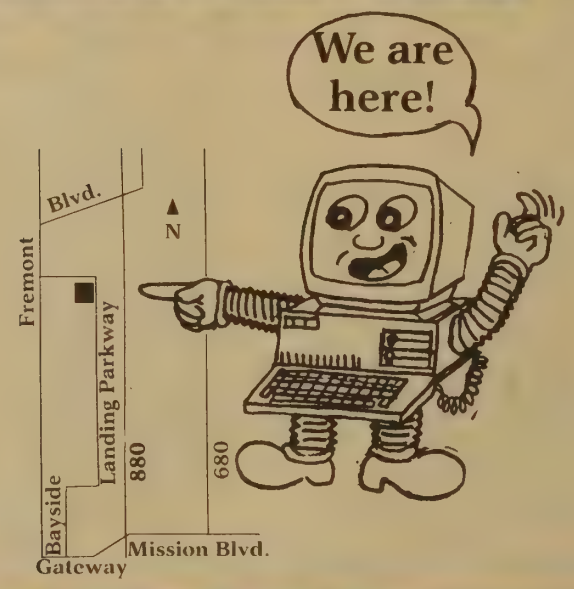

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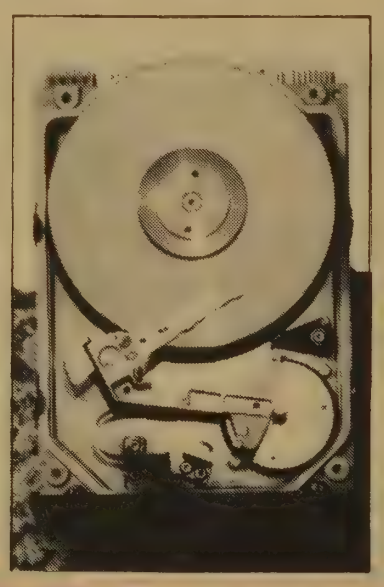

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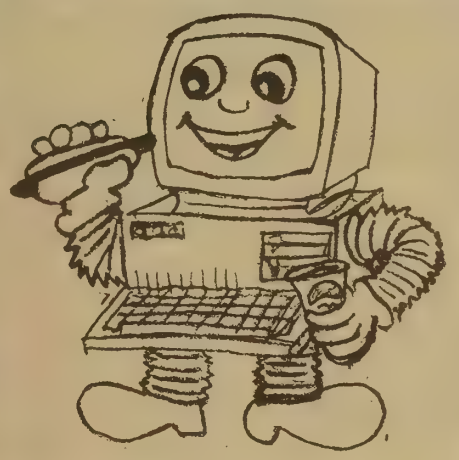

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Taking Your Business Online

Multiline Bulletin Board Software For MS–DOS

BY BERNARD ABOBA

As with so many other aspects of microcomputing, bulletin board software has grown beyond its hobbyist roots and become a solid business tool.

In fact, today's bulletin board software has become so capable that several products could provide for the electronic mail and database needs of a small company, at a fraction of the cost of a local area network-based solution. Best of all, since the strong point of bulletin board software is communications, the software operates equally well whether users are located down the hall, or are calling in from thousands of miles away.

TELECOMUNICATIONS

Bulletin board software is now linking branch offices of federal agencies together; providing for online navigation of the tax code in hypertext; providing product support and online ordering; maintaining a 1.4 Gb shareware library accessible on 90 phone lines; providing nationwide FidoNet and UUCP mail and conferencing to members of a large user group.

In the long run, the database and bulletin board software categories appear to be converging. For example, TBBS now supports an optional dBASE III+ compatible database, and several other products sport powerful built-in databases as well. In turn, several database programs now allow for remote access and setting up of menu structures for online navigation between several databases.

TO DOS OR NOT TO DOS

If you think there is a possibility you'll want more than one phone line, I recommend purchasing a multiline bulletin board package from the beginning. That way, adding another line can be as easy as selecting an item from a menu, instead of having to purchase more hardware and software. In the multiline arena, MS–DOS and UNIX reign supreme. There is no Macintosh-based bulletin board software that can handle 16 lines, except under A/UX.

Whether you choose MS–DOS or UNIX is primarily an issue of flexibility, complexity and expense. The market for MS–DOS bulletin board software is more competitive than the UNIX market. As a result, prices are lower and the packages are locked in a "feature race," feverishly adding new capabilities. The UNIX packages typically allow UNIX commands or applications to be integrated into the menu system and executed simultaneously by multiple users. Since MS–DOS-based packages support multiple lines, but not multitasking, addition of custom applications is much more difficult.

The flexibility of UNIX does not come without cost, however; expect to spend an extra $2500 on hardware and software for a UNIX bulletin board system, compared with an MS–DOS solution. In this article, we'll focus exclusively on MS–DOS products capable of supporting 16 or more lines on a single PC. In a subsequent article, we'll cover UNIX bulletin board software.

For internal communications, customer support, order processing, and other needs, more businesses are creating their own bulletin board systems. Here's a look at some of the leading software options by a long-time BBS operator.

HOW TO CHOOSE A BULLETIN BOARD PACKAGE

My rule is to only consider bulletin board software I'd like as a caller. I've included phone numbers of example systems for each of the packages reviewed, and I encourage prospective buyers to call them. Once you've found a product you like as a user, it's time to consider it from the sysop's point of view.

For a sysop, product support makes or breaks a bulletin board package. Bulletin boards are much more complicated and capable than they were five years ago; no matter which package you buy, you're going to need help, probably as often as once a month.

Since bulletin boards often run 24 hours a day, seven days a week, reliability is also very important. Bulletin board software is often constructed as a series of modules that interact with each other. For example, several systems shut down automatically at night to run a special FidoNet mailer program, then start themselves back up again; another system is a combination of modules written by different vendors. In my experience, most bulletin board software problems arise from the interface between the different modules. A seamless, integrated product by a single author is likely to be more reliable than a collection of modules written by different vendors.

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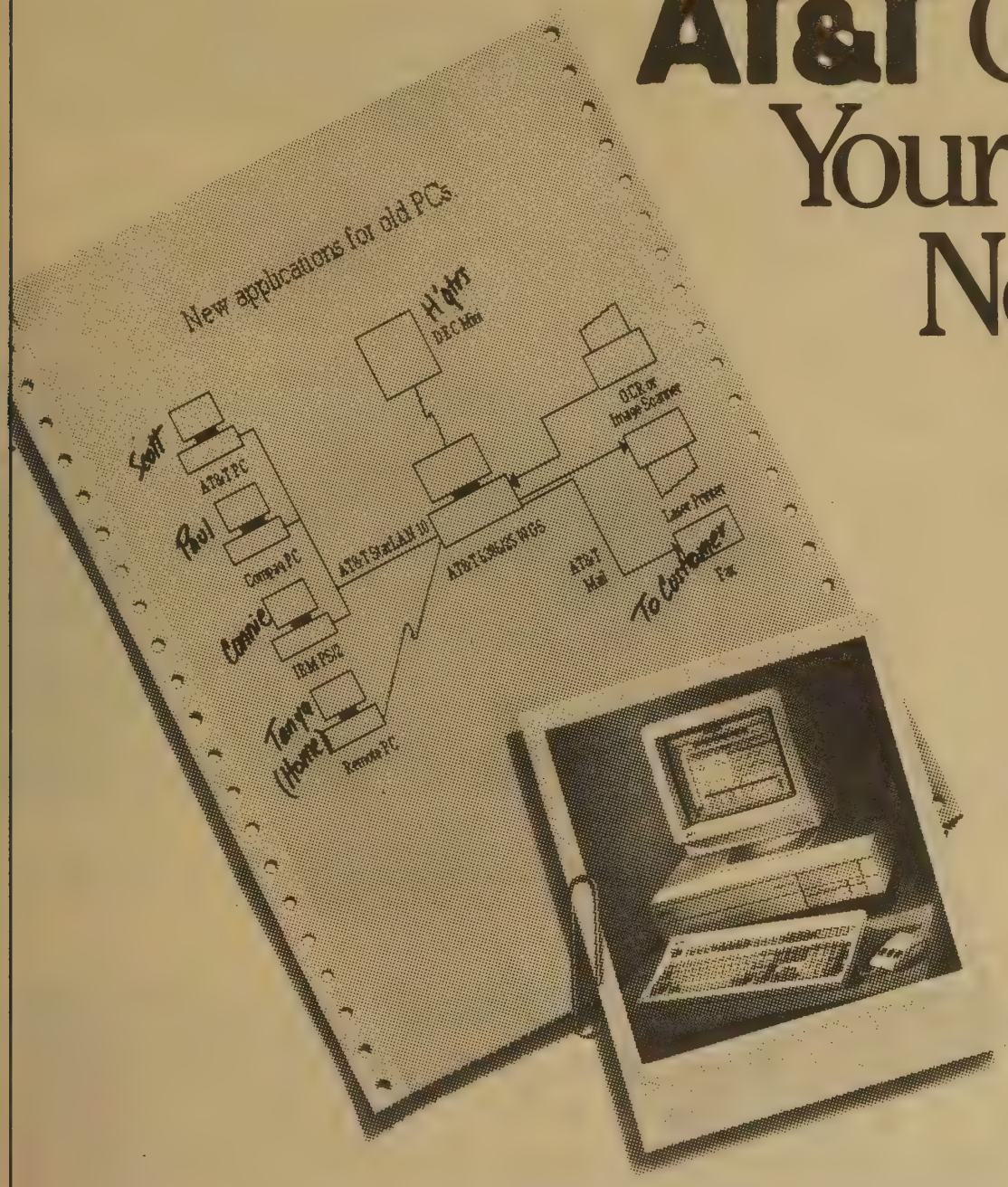

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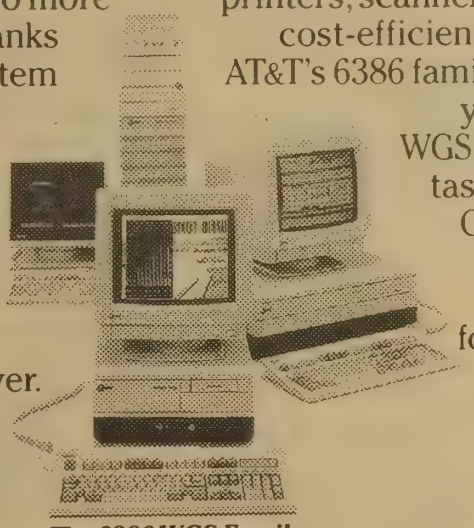

The 6386 WGS Family

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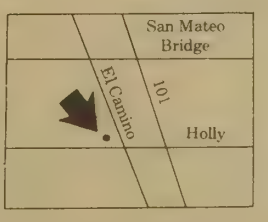

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ine TBBS earns my recommendation as the best general purpose bulletin board running under MS–DOS.

TBBS pioneered the high–end microcomputer bulletin board software market with its release in 1981 for the TRS–80 Model I/III. The first IBM PC version appeared in 1984, with the multiline version making its debut in June, 1987. Throughout its life, TBBS has pioneered features that have been imitated by other programs, such as configurable menus and multiline operation under MS–DOS.

TBBS is the sole business of its publisher, eSoft. Technical support is free, and offered in many different forms. Voice support is offered six hours per day, five days a week; BBS support is offered 22 hours a day, seven days a week. eSoft assists in the nationwide TBBS conference on FidoNet, and the distribution of utilities and modifications via the TBBS Distribution Network (TDN). eSoft also sponsors an annual TBBS Symposium at which the author of the package (Phil Becker) gives instruction on use of the product, and new features. If you can't make the conference, course notes and audio cassettes are available.

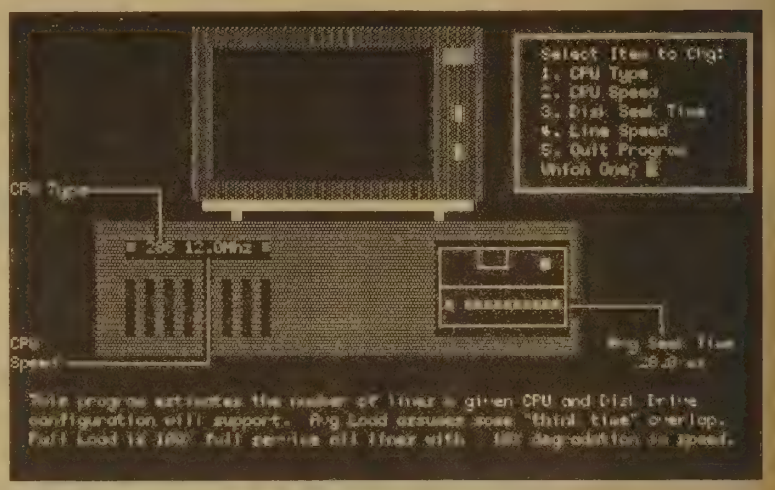
eSoft stands behind its products. The Bay Area TBBS dealer has acquired an outstanding reputation for service, making house calls in emergencies. eSoft provides a two-year warranty on Digiboard cards purchased through them, and will provide a loaner while the repair is in progress.

TBBS gives the sysop the tools for good user interface design. TBBS's menu construction features are so flexible that almost any system's "look and feel" can be implemented. This means that a TBBS board can be modeless, while making use of ANSI graphics to give the user feedback on the results of their commands. Other aspects of TBBS, such as the message system, have also been designed to emphasize simplicity and ease of use.

Both an interactive menu editor, and a batch System Definition Language (SDL) are available for developing and modifying custom menus and screens, and for linking the execution of TBBS commands to particular keyboard inputs. Menu items may be chosen from a list of over 45 commands, and access to menu items may be controlled according to which phone line the user has called, user access levels, terminal type, time of day, and other variables. Users logged in on different phone lines can be made to see completely different systems. TBBS supports ANSI and IBM graphics, allowing for construction of complex screens with limited automatic translation for incompatible terminals.

Another outstanding feature of TBBS is the support for an optional integrated dBASE III+ compatible database (TDBS). With TDBS, 32 simultaneous users can access a database at the same time, as well as make use of bulletin board features. TDBS supports a subset of the dBASE III+ language, and allows transparent file sharing and screen updating.

To date, the most popular applications for TDBS are in vertical market applications and in online games; a catalog of TDBS applica-



The TDBS option module for TBBS allows inclusion of dBASE III+ compatible databases within the menu structure. This example, running on the TBBS support board, calculates the number of phone lines that can be supported by a given hardware configuration.

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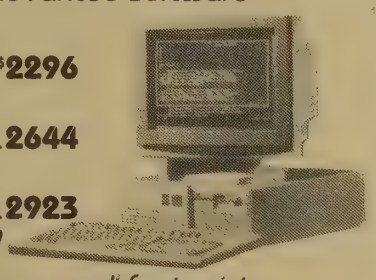

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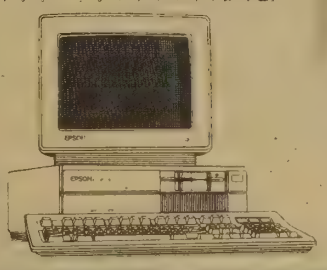

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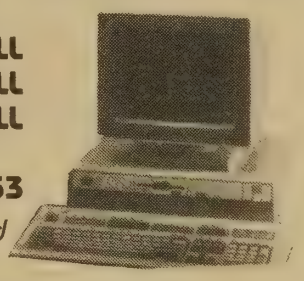

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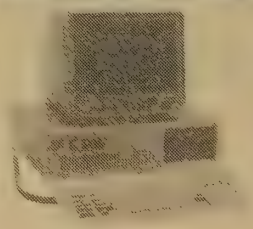

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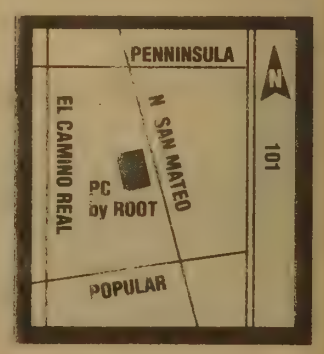

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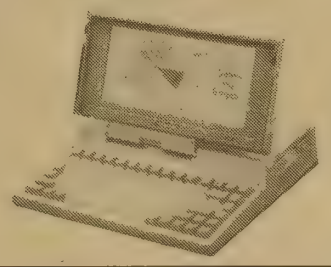

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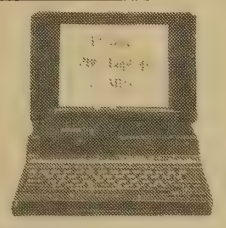

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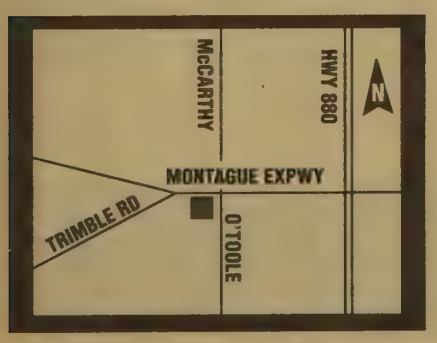

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tions is on the way. The combination of a powerful programmable database with bulletin board software makes TBBS potentially a complete solution to the communications and database needs of a small business.

TBBS offers several features to allow easier searching of the files library. One of these is a command allowing construction of a text database of files descriptions or keywords, which can be searched with Boolean queries. In addition, files may be enclosed within messages describing them.

TBBS's messaging facilities are very easy to use, but are not as powerful as those of other packages, such as The Major BBS. Although TBBS supports keyword searching of the message envelope (consisting of the TO, FROM, and SUBJECT fields), full text or date range searching of the message base is not available. As a result, information may be hard to locate on large systems.

TBBS is 100% compliant with the FidoNet mail and files transfer standards. Currently, multiline operation needs to be shut down in order to send or receive FidoNet mail; however, with the release of the TIMS multiline passive mailer due out in the first quarter of 1990, receipt of incoming mail with callers online will become feasible. TIMS will also support FidoNet file request, file sending, and point mail.

TBBS is very reliable. During several weeks of testing, the core product did not crash even once, even though we did experience problems integrating TBBS with the FidoNet mailer provided by another vendor. Integration of external mailers has traditionally been a source of difficulty with TBBS and other FidoNet compatible software, and I recommend that sysops avoid this arrangement if possible. With the release of the continuous mail module, TBBS will become a completely integrated, seamless product, which should eliminate the mailer integration difficulties.

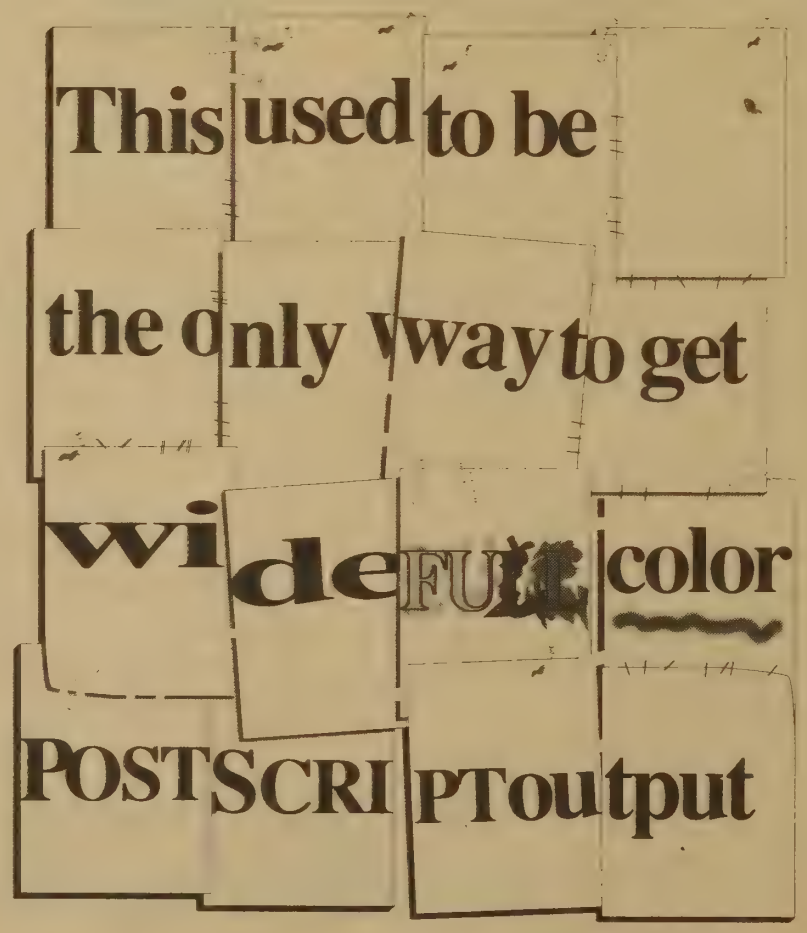
The efficiency and large feature set of TBBS come at the expense of extendibility, so that operators of very large (over 32 lines), highly customized, or niche services may need to look elsewhere. For example, DLX or Oracomm implement features such as questionnaire matching, which may be more appropriate for operation of a computerized dating service.

TBBS, like other MS–DOS based packages, does not implement generalized multitasking, and so cannot support simultaneous execution of multiple DOS applications or commands. eSoft has attempted to fill the need for extendibility with the TDBS option module. Other option modules include sysop remote maintenance (SYSOM).

While the option modules are very easy to install (just specify the modules when invoking TBBS), they are not easy to write. TBBS architecture demands that add–on option modules be written entirely in assembler, and must not use the stack. As eSoft does not offer source code, and the developer's program is highly exclusive, fewer add-ons are available than for The Major BBS.

TBBS is a complex enough package (particularly with addition of the TDBS database)

Today's bulletin board software has become so capable that several products could provide for the electronic mail and database needs of a small company, at a fraction of the cost of a local area network-based solution.



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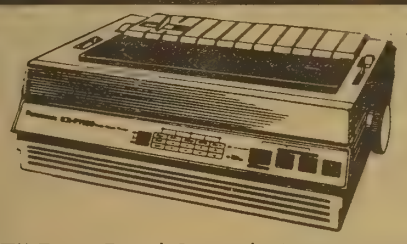

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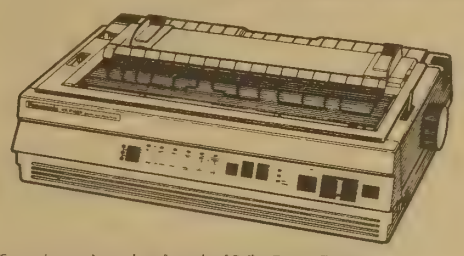

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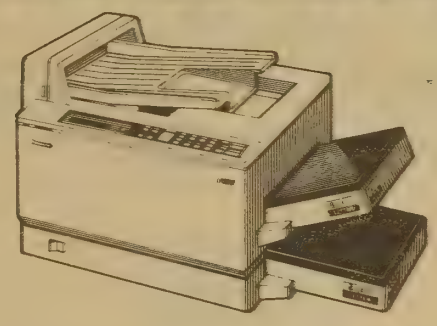

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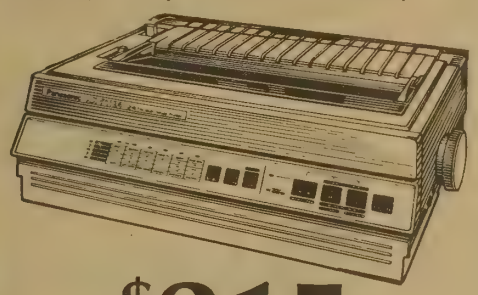

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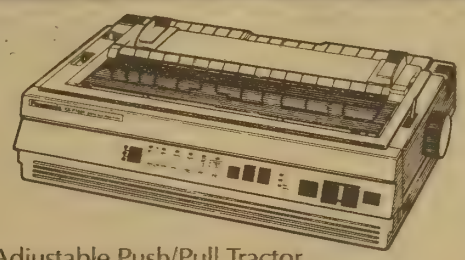
KXP-1124



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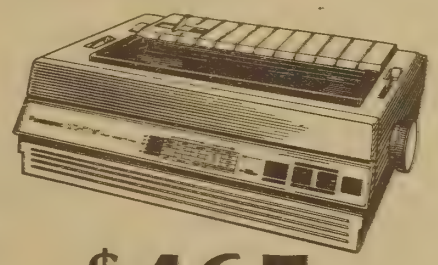

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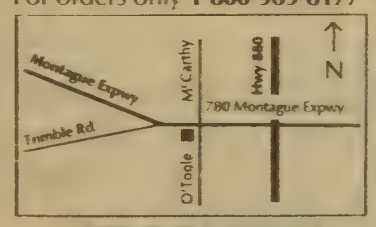

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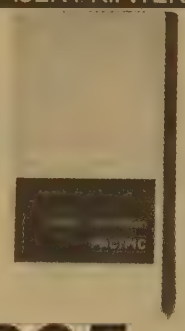

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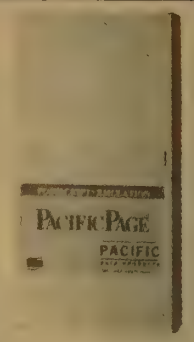

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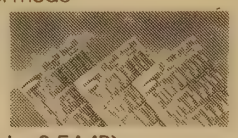

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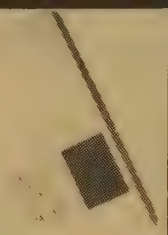

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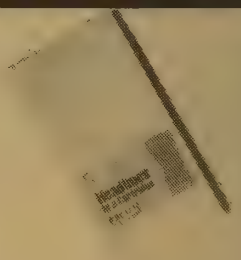

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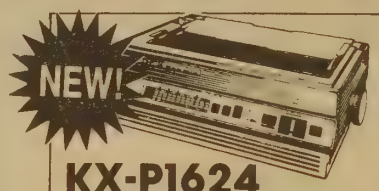

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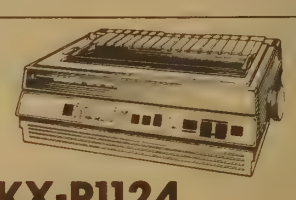

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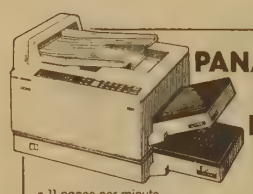

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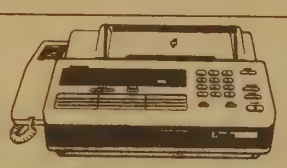

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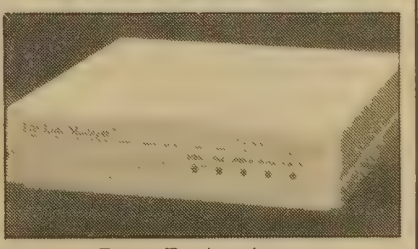

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that a large book could be devoted to it. The documentation, while complete, could benefit from more examples. While an example setup is included with the package and works right out of the box, it should be expected that developing a custom system, including FidoNet mail, should take between 30 and 60 days. While TBBS is an extremely capable package, its complexity may be intimidating to the technically unsophisticated sysop.

TBBS is written entirely in assembler, and as a result it is extremely efficient. For example, with all option modules loaded, 32 simultaneous users at 19.2 kbps will experience no performance degradation on a 33 Mhz 80386 PC with 4 Mb of memory. For a UNIX-based system, 100% more memory would typically be required to implement 50% fewer lines.

ORACOMM PLUS

Oracomm Plus is descended from the Dial Your Match bulletin board package, and still retains strong dating service features. However, with the release of Oracomm Plus, Surf Computer Systems has oriented the program more towards the business market. Perhaps the most outstanding feature of Oracomm Plus is its very sophisticated integrated electronic mail and networking feature, called OraNet. With OraNet, Oracomm Plus systems can exchange mail and files, as well as create a conference across multiple systems, without shutting the system down. Setting up OraNet is a snap, and the Oracomm Plus mail system is completely integrated. Linking of Oracomm Plus systems is also possible in real time; this means that interactive chatting can go on between linked systems located thousands of miles apart. With Oracomm Plus, one line can also be set aside to dial out to another computer, allowing users to access other computers from within the software.

Another unique feature of Oracomm Plus is the ability to interface with the PCW Weather Station, so that weather data can be collected and transmitted between multiple sites. Oracomm Plus also supports "text branching," which allows for construction of online tests and adventure games. Multiline chatting, and EMS memory are also supported. Since Oracomm Plus allows for linking of messages together, it can support ANSI graphics screens of greater complexity than any other package. Oracomm Plus allows for all system configuration parameters to be changed remotely at any time, and includes provision for additional remote sysop passwording. However, DOS commands cannot be executed in remote sysop mode.

Files descriptions are located within a database in Oracomm Plus. This makes it very easy to find a desired file. A text database feature is available as well, which allows searching on arbitrary fields. The message system is relatively easy to use, although more powerful features such as full text search on the message base are not available.

The author of the Oracomm Plus package works full time on developing the software, which is marketed by Surf Computer Systems. Tech Support is available by voice and bulletin board, and I found the staff enthusi-

In the long run, the database and bulletin board software categories appear to be converging. For example, TBBS now supports an optional dBASE III+ compatible database, and several other products sport powerful built-in databases as well.

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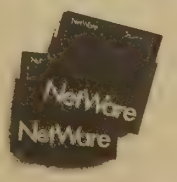

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astic and knowledgeable.

Overall, Oracomm Plus offers a very nice mix of power and ease of use. For example, it would be a very good choice for a small business looking to link branch offices with a minimum of hassle, but not requiring mail links to the outside world. Although no dBASE compatible database is offered, the text database feature should be adequate for many applications. Oracomm Plus does not allow for complete control over the menu structure, although the menu prompts can be internationalized. No third party development program is available, and FidoNet support via an external mailer is due for inclusion in a subsequent release.

THE MAJOR BBS

The Major BBS is the only MS-DOS package reviewed that is available with source code. This, along with Galacticomm's strong third-party development program, has resulted in a thriving market for Major BBS add-ons. Since The Major BBS itself is available in five different editions (Standard Edition, Configurable Menus/MenuMan, Online Mall, File Libraries, and Entertainment), The Major BBS sysop has a very wide latitude in choosing how to configure the system.

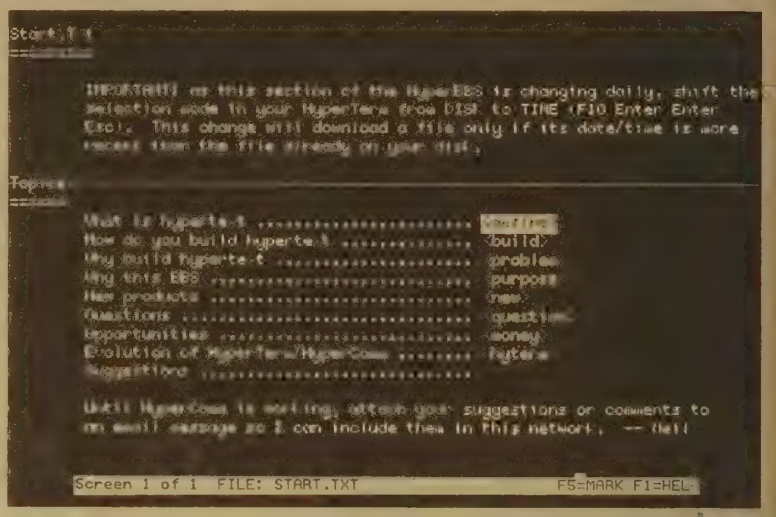
In addition to being a software company, Galacticomm, the developer of The Major BBS, also has considerable hardware expertise. The Major BBS may utilize modified versions of multiport cards such as Stargate, as well as the Galactibox chassis, which allows The Major BBS to handle up to 64 phone lines. The availability of source code, the third party program, the support for 64 lines, and an X.25 hardware and software option that allows direct connection to a packet switching network, and the availability of a sophisticated billing system has made The Major BBS the software of choice for many of the nation's largest bulletin boards.

The messaging system of The Major BBS is the most powerful of any package. Full-text searching of the message base is available, which is a very useful feature when utilized in concert with a large message base. Individual message boards may be turned on and off. Carbon copy mailing and return receipts are also supported, as they are with TBBS.

With the release of the hypertext module currently under development, The Major BBS will offer unique capabilities for information presentation and collaboration. Other unique features of The Major BBS include a huge selection of multiplayer games, plus an online shopping mall edition that handles ordering and produces invoices. Other features include the ability to receive and send faxes, to dial out to another computer, to link with other Major BBS systems in multiplayer games, "matchmaking" questionnaires, and more.

If you get the idea that The Major BBS is a very capable and complex piece of software, you're on the right track. However, as with any program that grows beyond the bounds of its initial design, the real test of greatness is the degree to which the package retains its elegance and simplicity while adding features. This is where TBBS shines, and The Major BBS falls somewhat short.

Since TBBS and many of its add-ons are written in assembler, the code takes up much less RAM than Major BBS, which is largely written in C. As a result, TBBS allows much larger message sizes, and more option mod-



HyperBBS, currently under development by Neil Larson, is an option module for The Major BBS that allows users to browse hypertext online.

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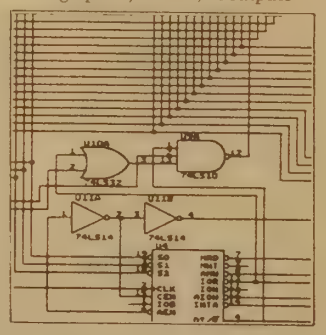

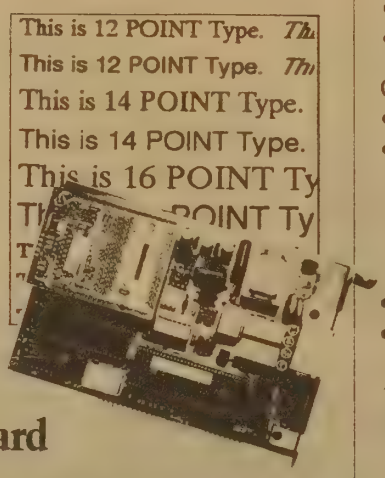

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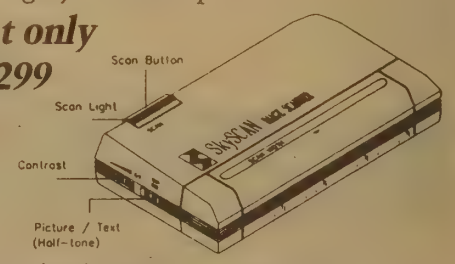

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ECI 386-25 VGA SYSTEM

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- Full size 6 layers main board running at 20/25 MHz w/ 0/1 wait state
- Double Sigma Intel 80386 CPU and latest AMI BIOS
- Landmark=34.5, SI=28 w/memory interleave
- 1 32-bit, 5 16-bit, and 2 8-bit slots
- 80ns 1MB RAM standard expandable to 8MB on board or up to 16MB total using dedicated 32-bit memory board
- Sockets for 80287 and 80387 Math co-processors
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UPGRADE	
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VGA	1595
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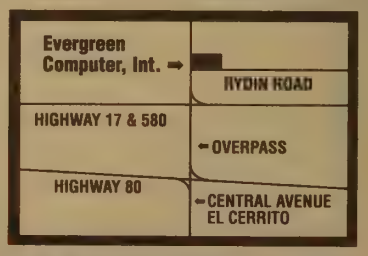

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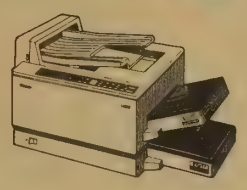

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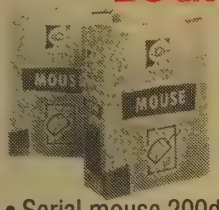

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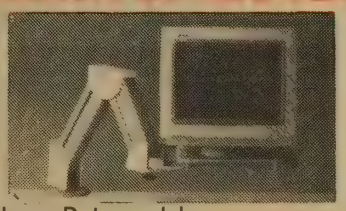

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• Goldstar VGA Monitor 720 x 480	335
• Goldstar Monitor 800 x 560	445
• Panasonic	CALL

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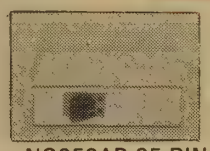

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8088-10MHz (No D RAM)	65

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• Baby AT Case	49
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ASB24-512 ..... **419**

• Same as ASB624-256 except with 512K memory installed

ADD ON BOARD

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• Color Graphic	35
• EGA 600x800 card	105
• ATI 16 Bit VGA 640x480 (small wonder)	179
• ATI 16 Bit VGA 1024 x 768 512k (wonder)	235
• ATI 16 Bit VGA 1024 x 768 512k (wonder) w/mouse	295
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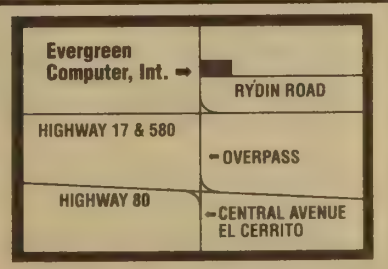

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ules can be loaded without having to consider memory limitations. For example, at no time does TBBS require overlays, while compilation of a complex Major BBS system may require use of PLINK, with overlays residing in an EMS cache. While TBBS was designed for use with EMS memory, use of EMS was an afterthought in Major BBS, and is provided for only by use of PLINK.

While The Major BBS has more features than TBBS, several important features such as the loading of option modules, FidoNet mail, and configurable menus are implemented in a more elegant way in TBBS. While installing TBBS option modules just requires adding another parameter to the TBBS invocation, installation of Major BBS option modules can be a complex task. For example, if one wanted to implement both an online shopping mall and games, The Major BBS source code for the modules would have to be integrated, and the result compiled, and linked. An overlay linker such as PLINK may be required to overcome MS-DOS limitations. When major updates are announced for the core product or option modules, the whole process has to be repeated.

Several vendors, such as MedCom Info Systems, offer their services in fixing bugs, as well as integrating and compiling The Major BBS options and add-ons. Since several of the add-ons may conflict, use of a service such as MedCom is highly recommended for a complex Major BBS installation.

In order to conserve memory, The Major BBS has a maximum message size of approximately 1 K, as compared with the TBBS limit of 10K. As a result, incoming FidoNet mail may be split among several messages, and message envelope fields may be truncated. As The Major BBS was not designed with FidoNet Netmail in mind, the procedure for sending Netmail is somewhat convoluted, and other services such as UUCP mail are unavailable. A multiuser database called Paragon is for sale as an add-on, but is not dBASE III+ compatible.

Although The Major BBS is making major strides with the MenuMan option, recently adding the capability of displaying custom screens, MenuMan still does not offer the complete configurability of TBBS. For example, after exiting from a custom screen, MenuMan does not return to the calling menu, but rather to the default menu. This results in a somewhat disconcerting combination of custom and standard screens, and limits the sysop's ability to achieve a custom "look and feel."

With the exception of a dBASE option, The Major BBS has more features than its competitors, and many of the country's largest bulletin boards have chosen it. However, software cannot be judged by features alone. On the basis of user interface and module integration concerns, The Major BBS is a diamond that could use some polishing.

DLX

In contrast to TBBS and The Major BBS, DLX does not try to be everything to everybody, instead concentrating on ease of setup, and applicability for use in on-line ordering systems or dating service applications. On installation, the system automatically config-

CONTINUED ON PAGE 190

In my experience, most bulletin board software problems arise from the interface between the different modules. A seamless, integrated product by a single author is likely to be more reliable than a collection of modules written by different vendors.

MOTHER BOARD	
8088 10/4.77 MHz	$64
286-12MHz 4MB Socket	160
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386 SX-16 MHz	340
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386-25MHz 8MB Socket	800
386-33 MHz w/64K Cache	1,399

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WA-2 Clone	80
WA 1006 MFM 1:1	128
DTC-7287 1:1	144
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Teac 1.2MB	73
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External Type Backup	445

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ST-125	240
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ST-251-1	305
ST-4096	529

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Casper Color	207
Casper EGA	309
Casper VGA	320
VGA 1024x768	390
Casper Multisync	420
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Relisys VGA	325
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MISC.	
MS-DOS 4.01	$58
Mouse Logitech/Bus	65/75
Keyboard 84-101	32/35
Keyboard (Click)	40/46
Keytronic	28/46
Maxiswitch	46/54
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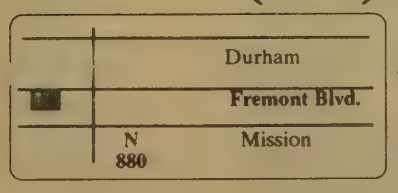

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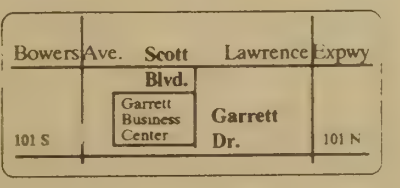

Compaq's SystemPro: Dawn Of The Super Server

BY DAVID SLOVES

LOCAL AREA NETWORKS

For years, the PC industry has shaken its fists at the minicomputer world. Now the knockout blow appears imminent. Like it or not, the newest generation of microcomputers comes equipped to surpass minicomputers as the network server of choice for high volume departmental and wide-area networks.

Already, Compaq's SystemPro appears ready to claim a leadership role in the realm where the DEC VAX, HP 3000, IBM AS/400 and Wang VS systems have been running the show. Why the extravagant claims about a machine shipping for less than three months? Why will the SystemPro truly unseat minicomputers where previous high-powered PCs have not?

Simply put—the SystemPro was designed as a minicomputer. Yes, it carries the style and lineage of a PC. Yes, it utilizes conventional PC operating systems—DOS, OS/2, NetWare, LAN Manager, and SCO. Never mind all that. Once you take it apart, the beauty of this system cannot be denied. And Compaq's hard-earned reputation for quality and reliability takes much of the fear factor out of making the decision to readjust to this new world.

NEXT TIME:
Why you should be putting your CAD systems onto a PC-based network.

SYSTEMPRO DESIGN INNOVATIONS

Start with EISA. It *was* worth the wait. Bus-mastering and AT-bus compatibility lets us have our cake and eat it, too. No, the fancy bus-master boards don't exist yet, but they are coming. And until they do, we can run all of those nice familiar boards whose drivers work. When the new boards hit, we just pass the standard boards off to another system.

Just seeing Compaq's Intelligent Disk Array controller board in action gives you a fabulous taste of where we are going. At last, disk mirroring apart from the operating system, and disk throughput that makes you understand why those large database queries that take minutes on your PC take seconds on a minicomputer. Up to 48 Mb/second transfer rate, if you have a full four-drive array installed.

Then there's the system memory. Enough capacity so you won't need to worry. Not soon, anyway. Hundreds of megabytes (up to 256 Mb). And with prices going down and density going up, the days of the 64 Mb DRAM servers don't look too far off. And all running at 33 MHz off of the 32-bit bus. And yes, third-party memory boards look imminent. (Albert Wong, the "A" in AST Research, has a new company called AMKLY Systems that looks like a good bet in this arena.)

Finally, you have to love the modular design of the SystemPro. Eleven slots, including seven for 32-bit EISA boards (or conventional PC/AT boards). A 300-watt power supply to handle whatever you might want to install. And enough drive bays to handle four or five devices.

BUT WHAT DOES IT DO?

So what does all of this high tech wizardry do for you? It provides you with a platform that does the toughest jobs on your list—fast and dependably. It brings you real life multiprocessing for SCO/UNIX (via Corollary's Symmetrical Multi-Processing extensions). And it flat-out performs faster than anything you've run without a cooling system in a multiuser environment.

Sure, there will be faster straight-line performers (including Compaq's own DeskPro 486—though a 33 MHz 486-processor board for the SystemPro has been announced).

For those of you who need a robust server for 50 to 250 users, linkage to a wide area network (with hundreds or even thousands of users) or a dedicated database server, the SystemPro brings you the performance for which you paid $300,000 or more last time around (even if that was only *months* ago). For about $35,000—fully loaded (including 840 Mb, 16 Mm DRAM, 2.2 Gb backup and a copy of NetWare 386, LAN Manager 386/486 or SCO 386). Scary.

The SystemPro provides you with a platform that does the toughest jobs on your list—fast and dependably.

The most impressive aspect of the SystemPro thus far comes from the Intelligent Disk Array. Compaq was able to utilize bus-mastering to provide both synchronous access to multiple drives (reading or writing to more than one disk at a time) and built-in disk mirroring or guarding (a compression scheme that only uses 1/4 of your disk capacity, versus 50% for mirroring)—without the help of the operating system. The elegance of this design includes linking the drive access directly to the 32-bit high speed memory, furthering the ability to move data from point to point. For distributed databases, this alone will make you an EISA believer.

As board technology evolves, the EISA design will allow network bridges and gateways to function with the same simplicity found in the drive array technology. This functionality will allow far faster network response time without giving up the ease of wide area communications that helped justify installing your network at the outset. These developments, along with the maturation of the various multiuser operating systems for microcomputers, represent significant contributions to the implementation of true enterprise, multiplatform networks.

The brilliance of the EISA concept (as well as of its rival sibling—IBM's Micro Channel Architecture) lies in the ability to offload operating system overhead, particularly I/O handling, onto comparatively low-cost dedicated microprocessors. Bus-mastering architecture closely parallels the use of RISC implementation in its ability to minimize the functions being handled by any one processor in a system. We will certainly see RISC processors going into EISA boards during the next year—particularly for graphics and other high-horsepower functions. Hot stuff—even for an industry filled with jaded hardware consumers. ■

David Sloves is the founder and CEO of Desktop Products, a systems integrator specializing in wide area networking (including PC-to-PC and PC-to-host) and computer-aided design. The Emeryville-based company provides sophisticated microcomputer-based solutions to large organizations in Northern California and to numerous Fortune 500 manufacturers and service firms throughout the United States and Canada. He can be reached by phone at (415)428-1035 or by mail at 1316 63rd Street, Emeryville, CA 94608.

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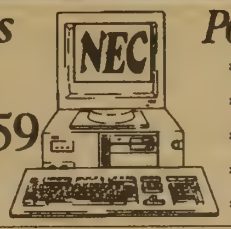

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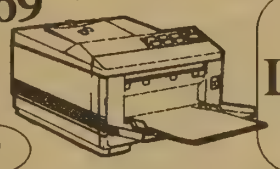

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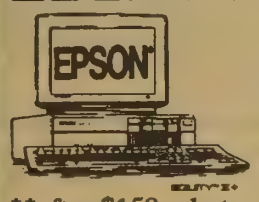

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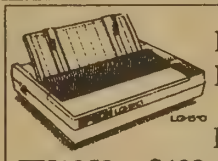

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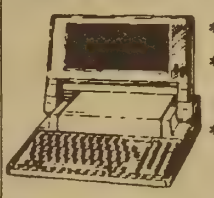

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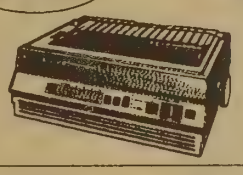

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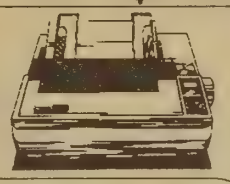

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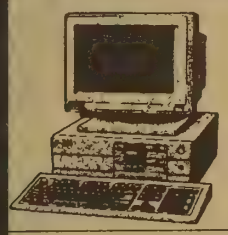

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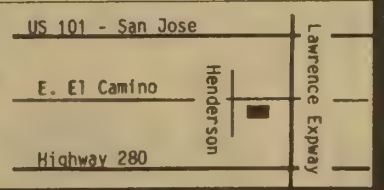

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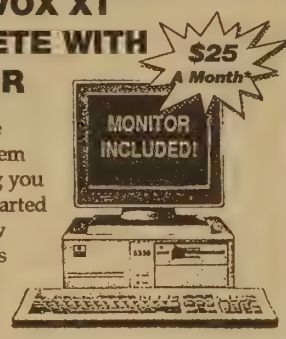

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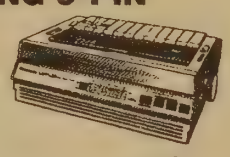

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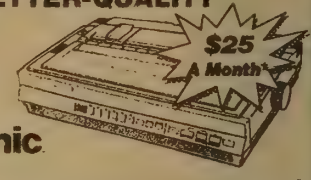

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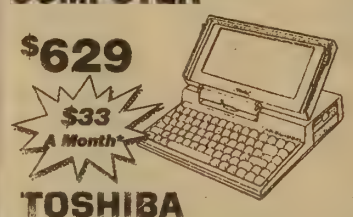

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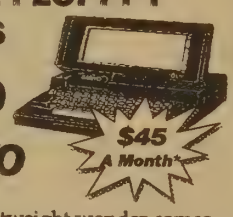

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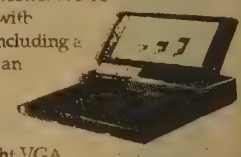

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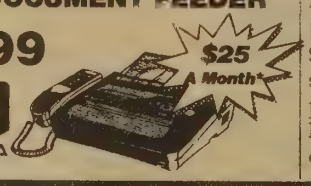

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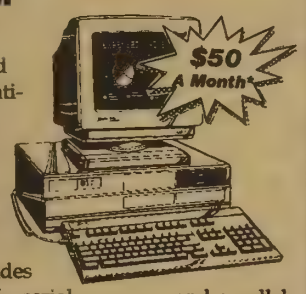
DTK 386SX COMPUTER SYSTEM



Get the flexibility and future compatibility of 386 computing with some special improvements by DTK. System includes 1MB RAM, serial and parallel ports, baby desktop case, 200W power supply, keyboard, 1.2 MB floppy drive, and 1:1 hard/floppy controller. (monitor extra)

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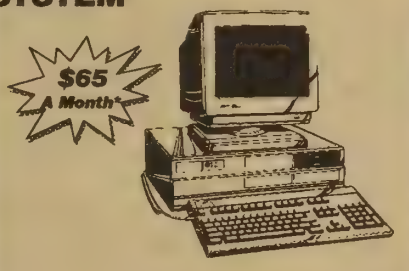
DTK 386 COMPUTER SYSTEM



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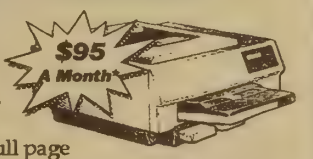

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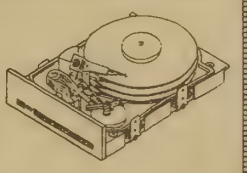

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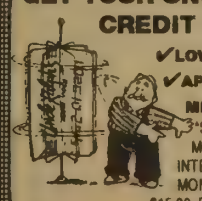

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BY ED KAHN

Years ago, I looked into a crystal ball and saw a six-pound notebook-size computer with a decent screen, large hard disk, floppy drive, and room for all of the accessories I would want. I could see the machine clearly, but could not make out the manufacturer's name.

Now I know that the name on the machine was Compaq. Indeed, this is the machine I have been waiting for. When it comes time to return it, they may have to fight me for it. This machine offers much the same performance as the 15-pound Compaq 286 I praised last year, only in a smaller package. It is powered by an 80C286 processor running at 12 MHz.

At less than two inches thick and a paper-perfect 8 1/2" x 11," this is as small as I think a computer should get. It can get lighter, but not smaller, because this is the smallest size that will allow a decent keyboard and display screen. Smaller units, which are getting a lot of attention these days, really do not work for me as full function computers, no matter how much power they pack.

NOT A DESKTOP

This unit is not simply a smaller version of the portable 286. It would be possible to use the larger machine as a one-and-only computer by connecting to a VGA display and the expansion chassis which Compaq offers. This machine, however, is clearly a machine to use on the go. It has a smaller display, measuring about 8 1/2" diagonally. But more importantly, it does not offer VGA compatibility. The CGA display works just fine on the portable, but makes working with text on an external monitor less than ideal.

Aside from this, the functional differences between this lightweight unit and the 15-pound big brother are minimal. The keyboard on the LTE is pretty standard, but unfortunately it uses the Fn key to call up some of the functions that one uses regularly when working with words. The addition of a numeric keypad ($119) makes writing on this computer a good deal more to my liking. Although the keyboard lacks the full stroke of a conventional keyboard, it is large enough for me to type well. It has a good feel and layout.

Although the market is now being flooded with super-light portables, this is the first one I have worked with that really gets the job done without forcing me to make tough choices. I have never been happy with lightweight computers that offer alternatives to hard disks.

OPTIONS

Compaq makes this computer in three configurations. The top of the line model ($4,999) has a 40 Mb hard disk as well as a double density 3 1/2" drive. The model 20 ($4,499) comes with a 20 Mb hard drive. An entry level model ($3,899) comes with only a 3 1/2" floppy. Although Compaq machines are not inexpensive, they do offer all the options, and everything always works perfectly.

This machine comes with 640 K memory standard, but it is expandable to 2.6 Mb with the addition of a memory upgrade kit ($1,299). This memory is configurable as LIM 4.0 to accommodate software that requires expanded memory.

The basic computer does not come with an operating system, but they give you a choice of DOS 3.31 ($120) or DOS 4.01 ($150). Compaq, like most computer manufacturers, has Microsoft customize their versions of the operating system. In the release tailor-made for this computer, DOS 3.3 offers the ability to run partitions larger than the standard 32 Mb. This allows you to run the entire 40 Mb hard disk as a single partition. In many ways, although I like certain features about DOS 4.01, this works out to be a better arrangement because it avoids both the additional size and some of the software incompatibilities of DOS 4.01.

Although the market is now being flooded with super-light portables, this is the first one I have worked with that really gets the job done without forcing me to make tough choices.

In addition to the built-in floppy drive, it is also possible to attach an external floppy or tape backup. Either a 360 K or 1.2 Mb drive costs $275. Both, however, must be used with an External Storage Module ($349). A 40 Mb tape drive ($799) requires the same storage module. A final option is a second 3 1/2" 1.44 Mb floppy drive ($275), which is a self-contained unit drawing its power from the computer itself. The external storage module has its own power supply.

A built-in 2400 baud Hayes compatible modem ($449) fits neatly into the basic computer. No communications program is included with the unit. This is a no-frills modem that does everything it is supposed to do.

Communications software that can get you started is also included.

The Compaq LTE/286 is not only small; it is efficient. The whole system is designed to conserve power. From the backlit screen to the hard drive, ports, and modem, the setup program allows you to configure things to shut down during periods of non-use. The components spring back to life with the touch of a key.

The computer is powered either by the internal nickel-cadmium battery pack or by the AC adapter, which also charges the battery pack. The batteries will keep things going for about three-and-a-half hours. If you purchase an extra battery pack ($129), you can easily exchange batteries when the first one runs down. The pack weighs about a pound and a half, and is about the size of a couple of packs of playing cards. An external fast

RESOURCES:

The Compaq LTE/286 $4,999
Compaq Computer Corp.
20555 FM 149
Houston, TX 77070
(713)370-0670

Worldport 2400/MNP Modem $495
Touchbase Systems, Inc.
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•AMI Motherboard
• 1MB • 1.2 Teac
• WD 1:1 • AT Case/PS
• Keytronics 101
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Motherboard
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• WD 1:1 • AT Case/PS
• Keytronics 101
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• AST

Premium 286	$1225
Premium 386	2710
Premium 386/25	3569
Premium 386/33	4265

• ALR

ALR-FSX10-386	$2020
ALR-FZ225-386	2764
ALR-F233-386	3814
ALR-F33-150	7193

• COMPAQ

DeskPro 286M40	$2165
DeskPro 386/20	3465
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DeskPro 386/33	CALL

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IBM 55-SXo31 386/16	$3895
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PixelWorks CA1280-DO8	Special
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Genoa 6400	255

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Micropolis 1335 71 MB	539
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CDC Wren 156	Special
CDC Wren 638	Special
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Mini-Scribe 3800MB 9380E	1596
Microscience 1090 80 MB	679
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Adaptec 1:1 2322B	239
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Future Domain	Call

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Fujitsu DL 3400/5600	536/1259
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Okidata 390/391	489/636
Cannon A50/A65	355/554
Toshiba 351/341SL	899/599
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HP Laser Jet+ II/IIP.	1595/1025
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T3200/SX	3196/Call
T5100/100 MB	3920/4480
T5200/100 MB	4644/5006

• SHARP

PC-4521	$1760
PC-252M	1889
PC-4602	1265
PC-4641	1915
PC-5541	3629

• MITSUBISHI

MIT 410	$2271
MIT 409	4791

• COMPAQ

COMPAQ SLT 286 M20	$3695
COMPAQ SLT 286 M40	3995
COMPAQ III M20	3295
COMPAQ III M40	3895
COMPAQ 386 M40	5295
COMPAQ 386 M100	6495

• ZENITH

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SuperSport 286/20	2935
SuperSport 286/40	3239
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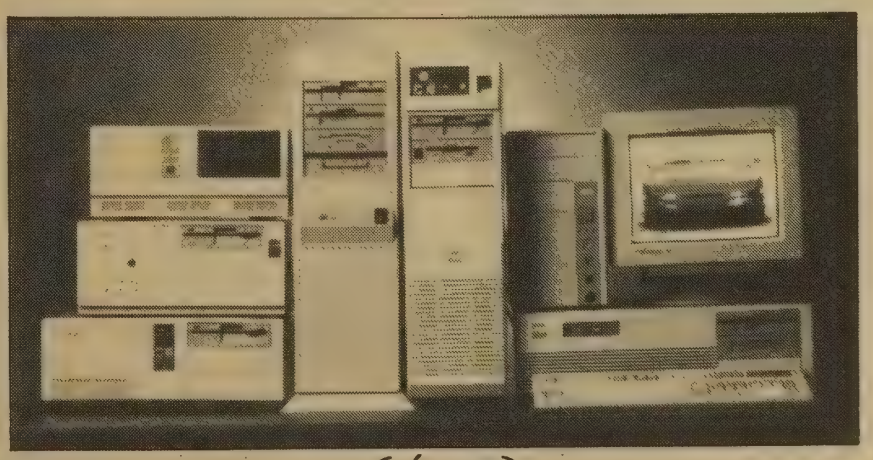

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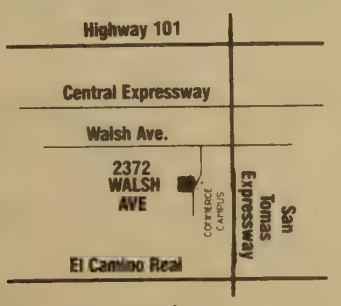

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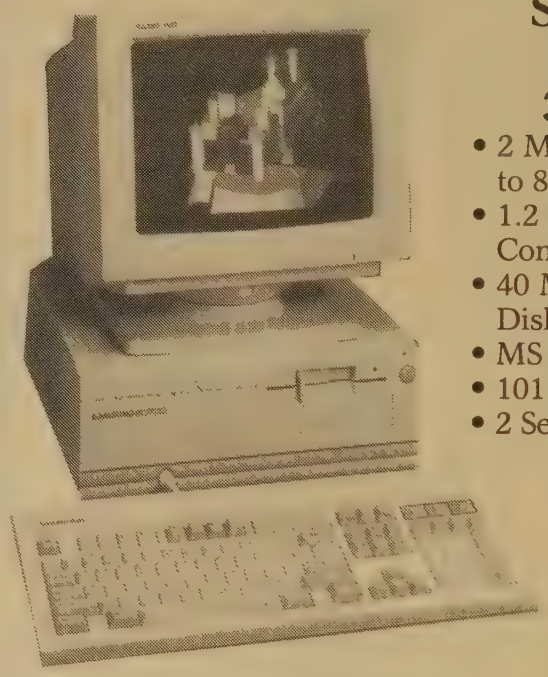

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charger ($199) will let you charge an external battery as well as the one in the computer in an hour and a half, whether you use the computer or not. The included power supply takes between eight and ten hours to recharge a battery.

For people who are in their car a lot, an automobile adapter ($129) is available. Although I never use a computer in the car, I like these units because you can easily recharge while driving—often easier than connecting to a conventional power supply. This is especially handy in foreign countries, although all of the Compaq equipment is set up to automatically adjust to different power systems found throughout the world. You nevertheless will need special Compaq power cords designed to fit the receptacles in different countries. Compaq asks you not to use the standard appliance converter kits.

Compaq documentation is always a pleasure. Nobody does a better job of presenting instructions for getting started and keeping things going than these folks. Information is well-organized so you can find what you want without going crazy, yet there is enough detail so you will not feel stranded if you need to know something. Separate documentation is available for each of the peripherals and the operating system you choose.

The package can be rounded out with a carrying case. Included is a slip case that holds just the computer. For many outings, this is really all you will need if you start with a fully charged battery.

For an extra $89, you can buy their optional carrying case. This is really worth it. It has two large compartments—one on either side—that are each closed by a zipper arrangement that lets the sides hinge all the way open. The one large compartment is custom fit for the computer itself and nothing else. The other side has a compartment with movable dividers held in place by Velcro that can be set up for the accessories you want to take along. There is enough room to hold power cords, AC adapter, telephone connection wire for the modem, and disks and still have room to spare. The case has a shoulder strap as well as a handle.

Unlike other small modems that I have seen, [the WorldPort 2400/MNP modem] includes a speaker, which I consider essential for a modem. I could use this gem every day without compromise.

ANOTHER OPTION

I have talked about the 80286 version of this computer. I should, however, point out that Compaq makes an 80C86-based model that has the same size and takes most of the same accessories for a lot less money. The model with a 20 Mb fixed disk lists for $2,999. If you don't need the speed or as much memory—it can expand only to 1 Mb—this may be the way to go. Any Compaq is a pleasure to use. Each of these models carries a one-year limited warranty.

ASIDE—THE WORLDPORT MODEM

I have recently seen a standalone portable modem that runs circles around anything else I have found. The WorldPort 2400/MNP modem ($495) is the Mercedes of modems. It has every feature you could want in a package a little larger and much better for you than a pack of cigarettes. The documentation is thorough and readable—as much as modem documentation can be. Unlike other small modems that I have seen, this one includes a speaker, which I consider essential for a modem. I could use this gem every day without compromise. You are paying for the size, but not compromising on quality or features. Take a look if you are in the market for a modem. ■

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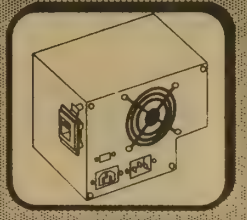
Add-on Cards

- 16-bit VGA card
- AT I/O card
- MGP card



Power Supplies

• PS - 6220	220W
• PS - 200	200W
• PS - 180	180W
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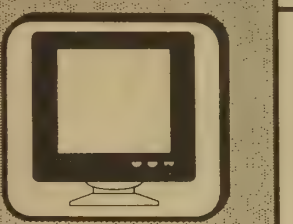

Monitors

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- CGA
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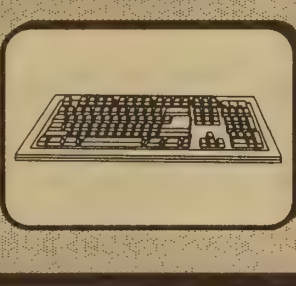
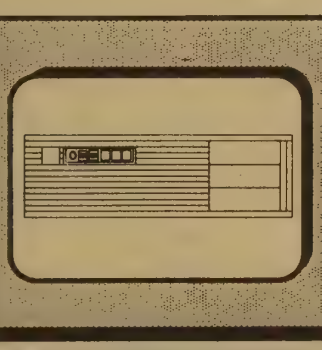


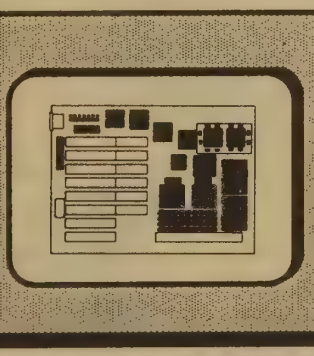
Keyboards

- 5339 102 - key
- 5339R 102 - key tactile feedback
- 5060 84 - key
- 5349 European languages, Cyrillian keyboard



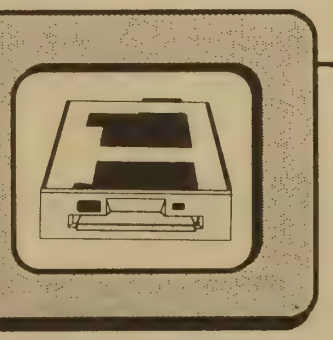
Cases

- Full size AT case (5 bays)
- Small size AT case (3 bays)
- Mini size AT case (3 bays)
- Tower case (6 bays)
- Mini tower case (4 bays)



Motherboards

- 286 - 12MHz (up to 4MB)
- 386SX - 16MHz (up to 4MB)
- 386 - 20MHz (up to 8MB)
- 386 - 25MHz (up to 16MB)
- 386 - 33MHz (up to 16MB)
- 486 - 25MHz (up to 16MB)



Floppy Drives

- TEAC 360KB
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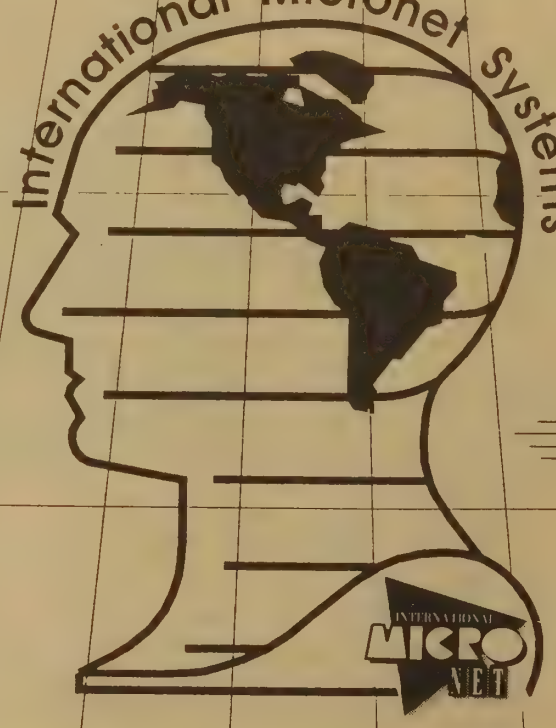

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From Consumer *To* Corporate

Software Publishing Corporation In A New Decade

By Mary Eisenhart

When Fred Gibbons started Software Publishing Corporation in 1980, just about everybody who used a computer at all was a beginner, and easy-to-use applications were vital to getting the personal computer off the hobbyist's workbench and into the mainstream of business. SPC's PFS product series was tailor-made for this purpose.

The ensuing ten years have been eventful for the entire industry, often terminally eventful for the hopeful young startups of 1980. But Hewlett-Packard veteran Gibbons has guided his company through the consumer-market shakeout and positioned it firmly as a leader in the corporate market.

PHOTOS: JAY BLAKESBERG

SPC's best-selling product, essentially the DOS standard for business graphics, is Harvard Graphics, but its product line also includes Softsel favorites Professional Write, Professional File, PFS: First Choice, and PFS: First Publisher. While the company's packages address different segments of the business market, they have certain key characteristics in common—customer-driven features and an emphasis on ease of use.

After coming through the turbulent '80s with flying colors, Gibbons is busy positioning his company to address the new challenges of the '90s. SPC is not given to identity crises—it perceives itself as serving an essentially Intel-based business market which currently uses DOS and will eventually migrate to OS/2, and that's where the company's putting its resources. Says Gibbons, "We're trying to meet the customer's demands for multiple platforms. But I won't do it at the sacrifice of being best of breed for a given architecture. I've got to do that, because history says that's how you win. And how you lose is trying to be all things to all people."

You're about to celebrate your tenth anniversary. Briefly, what were the origins of the company, and what kinds of changes have you seen in the industry during the last ten years?

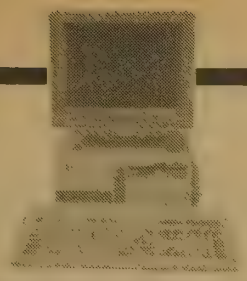
Well, we were very fortunate to be part of an incoming tide, and as a wise friend of mine once said, "When the tide comes in, even the dead fish rise." (laughs)

I was working at Hewlett-Packard as a product manager; I ran into Steve Jobs back in 1978. Apple had about 30 employees and was looking to do about $10 million in sales. He got me interested in personal computers.

He had a way of doing that...

And still uses that way.

I'm a software guy by trade; I have a BS and an MS in computer science. I've always been interested in software, and he got me interested enough to start poking around. I began to think up the concept that maybe we're going to need a bunch of authors creating



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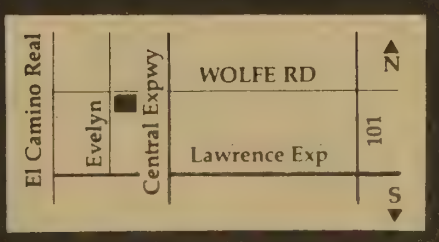
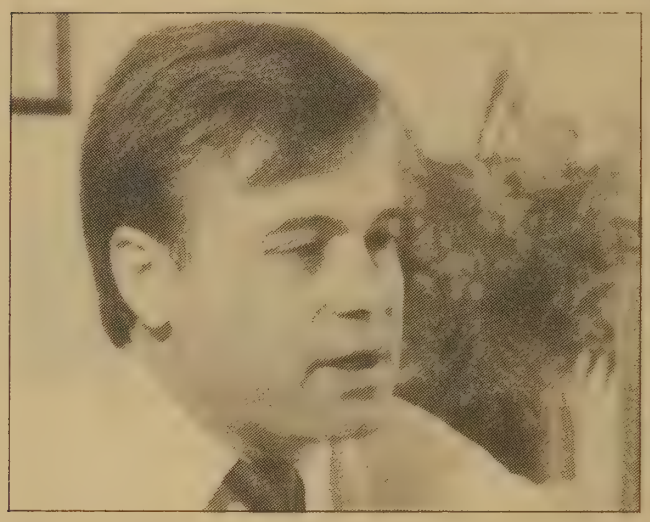


software, like music and records and publishing—so I said, "Ah! Software Publishing Corporation!"

At that time software was on cassettes—it wasn't even on floppy disks yet. So I started thinking about product ideas and assembled a team of people to initially help me launch the first product, which was PFS: File for the Apple II. That product came out just about the same time as VisiCalc, just about the same time the floppy disk drive came along.



"What was happening around the fall and winter of 1985 was the emergence of the 286, the power user, and the corporate standard. And here we were building low-end simple products for first-time users, so our sales did begin to decline."

We positioned the company to keep it simple for first-time users. Everyone was a first-time user, so that was a pretty good place to start, a pretty good thing to focus on. We also focused on publishing software from independent authors—we had one in-house author, John Page (laughs)—but then it became very clear to us that the quality of product, reliability and so on, was better when it was done by an internal engineering team. So we switched our focus—we were literally only three months old, and we switched it from publishing to internal development, but left the name the same.

And on merrily down the road we went. We had a half million dollars in sales the first year, two million the second year, and raised some venture capital along the way. The first-time user was still king; the Apple II came along, the PC came along from IBM in '81. We were building the right product for the right customer at that time.

We continued on that theme, and modeled the company after a Procter and Gamble type of thing—consumer marketing, shelf space, retail, that sort of thing. Again, it was very successful, successful enough to get us up to $20 million in sales. We took the company public in November of 1984.

We rolled on for yet another year still pushing the low-end product line—simplicity, ease-of-use, that sort of thing. Interestingly enough, we were using manufacturer's reps, third-party subcontractors to sell our products to retail, go door-to-door and sell it along with several other lines of product. The bad news was that when they weren't selling our product, or it was not selling as well, they'd just sell something else. Because they had no particular loyalty to our product line.

The result was that when marketing conditions began to change, we were kind of deaf, dumb and blind. We weren't hearing back what was going on, because these people would just merrily go on and sell something else instead of our products, and never feed back to us that we were beginning to show weakness in our product lines.

What in fact was happening around the fall and winter of 1985 was the emergence of the 286, the power user, and the corporate standard. And here we were building low-end simple products for first-time users, so then our sales did begin to decline.

In the winter of '86 we began to see significant decline in revenues. The company was now public, so we were very visible. We took stock of what was happening, and it was clear to us that there was a high drive toward corporate, that power users were coming to be the majority buyer, that they perceived our products as too simple for their needs, and therefore were not purchasing them.

The result was that we had a council of elders to decide what we were going to do about this. We could either follow where it leads, which is to become a low-end consumer products company, or we could try to break out and go after the high end. We felt that our product image and reputation was sufficient to give us a shot at trying to go upscale. But it required some things to change—as Honda, when it decided to go after BMW, had to come out with Acura. It was not credible that Honda could ever compete with BMW. So our original product line, PFS, could never be perceived as a powerful product line.

We decided that the best way to get there was through acquisition, so we acquired Harvard Software in Boston. It had a project management product called Harvard Project Manager. We then invented and built internally Harvard Graphics.

Which is currently the industry standard?

And 60% of our revenues.

So we took the positioning of Harvard—the analogy being Acura for Honda—and we built on it with our graphics product, and repositioned it as a high-end product, with a new fresh image, new clean positioning, not tainted with the low-end image of PFS and so on.

As a result of good product execution, good customer knowledge, and a lot of people backing it, we finally got a foothold in the high end, and then we began to bootstrap more in that direction.

We upgraded our PFS line to what we called our Professional series, Professional Write, Professional File. We didn't feel we had enough to go head-to-head with WordPerfect, so we didn't take those guys on—we went after a segment called the manager-professional segment. People who don't write for a living are less demanding of the overall functionality, but want exceptional ease of use.

We then back-filled by inventing more PFS products—First Choice, First Publisher, First Graphics. We were able to create three positions. An upward thrust to generate the exceptional growth that we've had, but also not forgetting our basics, like the PFS product—because you never know, suppose the high-end stuff didn't work, you'd have no position to retreat to.

With those things going we also committed to a high level of fixed costs. We've been a very variable-costs focused company—we want to be able to control our costs. We said that in order to be successful at the high end, we needed a dedicated sales force. So we fired our manufacturer's reps, and built, person-by-person, what today is over a hundred-person sales organization. They have to get paid, so that was a big increase in fixed costs, having to fund that payroll. But lo and behold, with the right products, they've been able to accelerate our growth even beyond what the products were able to do on their own.

Do they deal with distributors, or with corporate accounts?

Originally, it was all one sales force. Today we have two—a channel sales force and a major accounts sales force. The channel sales force has within it two pieces—one that calls on the distributors, and a second tier that calls on retail and does the hand-to-hand combat of point-of-sale, spiffs, training, all the things that have to be done at the actual store level.

The second sales force calls on the Kodaks, the 3Ms, the General Motors, the Fords, the NASAs, and convinces them to standardize on Professional Write or Harvard Graphics, or First Choice for their laptop sales force. They win the standards, but the customer actually places the order through retail. We model ourselves after the success of Compaq—we believe the channel is a partner, and we don't take orders direct.

So essentially the corporate sales force is an evangelism team.

Yes. It is. But because the channel reports to us by ZIP code where they ship things, we know how to do commission and quota crediting for these people. It's a missionary sell, but the results of that missionary work are tracked, and therefore we feel that we can create an incentive scheme that's meaningful for those corporate evangelists.

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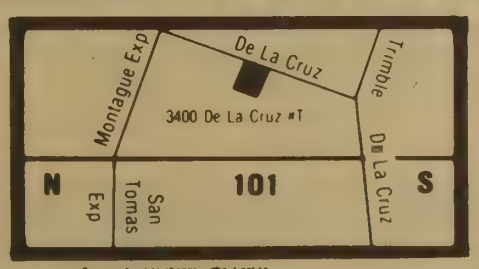

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"Alan Kay at Apple says the best way to predict the future is to make it happen. I'd like to predict a future of standards. I think standards like the PC standard have enormous benefits for the consumer."

What are your product strengths from a corporate viewpoint?

You always have to win the product war. You have to have the best of breed. We have the best of breed graphics product; we have the best of breed low-end integrated package, First Choice; we have the best of breed managerial word processor with Professional Write. You've got to win that first—these are competitions, and they've got six or eight choices, and you've got to win the product battle first. That's probably 70% of the war.

Then you have to be able to convince them you've got a strategy for the future—what are your plans to grow and move this product forward? You then have to convince them that you're credible in terms of support and follow-up services.

Your product line seems to be very Intel-intensive—mostly DOS with OS/2 in the works, and very little Mac stuff. I don't see any UNIX at all. What's behind the decision to focus on those particular architectures?

Alan Kay at Apple says the best way to predict the future is to make it happen. I'd like to predict a future of standards. I think standards like the PC standard have enormous benefits for the consumer. You get ravenous price-performance competition among Compaq, Toshiba, IBM, Epson, NEC, Hewlett-Packard, Tandy—tremendous guys beating each other's brains out, as a result of which you get incredible price-performance acceleration of value for the customer.

I believed in that. I'd like to see the industry return to standards—right now they're kind of fragmented among UNIX, Windows, Mac, OS/2, DOS. It causes us problems, because we have to design products for all those different platforms, and they're not the same, and it's not easy to port between them, no matter what anybody says.

From a consumer-advocate viewpoint, I'm an advocate of standards. I think it's healthy for the industry, healthy for the customer. From a pragmatic make-money viewpoint, I'd like to minimize the number of platforms I have to design for. Therefore you're seeing that philosophy and pragmatism applied to our R&D investment. We're a DOS company. We're investing in what is the next generation, the follow-on product after DOS, which is OS/2. We're respectful of the marketplace's desire to run graphical user interfaces on its existing platform—that's what creates the demand for Windows. We're trying to plan for how we can accommodate that need and port our stuff to Windows.

We've all seen the interest in Mac, and we're trying to invest in technology that would allow us to convert our products to Mac as well.

So we're trying to do it. We're trying to meet the customer's demands for multiple platforms. But I won't do it at the sacrifice of being best of breed for a given architecture. I've got to do that, because history says that's how you win. And how you lose is trying to be all things to all people, and being a mediocre breed.

How would you compare your company to Microsoft, Lotus, Ashton-Tate, or, as you mentioned, WordPerfect, all of whom are heavies in the corporate marketplace?

We compete with every one of those companies one way or another. We compete with Lotus—their product Freelance competes with Harvard Graphics. We compete with Microsoft with our product First Choice, against their product Works. We compete with WordPerfect, albeit in a segmented way, with Professional Write, and also I understand they now have a graphics product. Ashton-Tate is kind of off the radar screen; they're a hardcore database company. They have some peripheral lines that have competed with us in the past, but they have basically exited from those product categories.

There are gambles being placed on the future. I think Microsoft is gambling on being a full-suite supplier, an integrated set of office productivity tools. I think that Lotus is gambling on the spreadsheet being the central model for office automation.

We take a much different viewpoint—the difference may be subtle, but it is in fact real. We want to supply information services to end users. Let me be specific—we want you, the user, to be able to access and present information. We want you, the end user, to get data out of a database, see it on a screen in a way that's meaningful to you, whether that be in a form, a document, a chart or a graph. We want to give you tools that let you communicate that information—a document, a chart or a graph, a form.

Now what we don't want to do is be in the plumbing business. We don't want to be in networking, we don't want to be in database, we don't want to be in email systems. We want to connect to them, but we want to worry about the things end users use. There aren't going to be many winners in the plumbing wars, the operating systems wars—there aren't going to be many winners there, and that's not where we're going. We want to stay focused on end users—we're good at that. We want to stay focused on supplying them with what they need, which is access to information and the ability to present and communicate information. That's our view of that.

We don't think one company's going to supply a suite of applications, because we think the world is still going to look for a best-of-breed product. We think the improved connectivity will allow users to mix and match different apps from different companies.

The industry seems to have come full circle in the last decade, from everything being connected to a mainframe to everything being connected together again with networks and workgroups. Sneaking the mainframe back into the PC-based office, as it were. How does that affect what you do, and what are you doing about it?

Well, what we've had to do is recognize that our business is split. We have two fundamental divisions within Software Publishing—one is a retail products division, focused on individuals and individual productivity tools, typically sold through retail. The support, the packaging, the pricing, all that is focused on that kind of environment. We have a second fundamental division called the corporate products division, focused on the corporate customer, their needs.

So we've recognized and structured the business on this change, and if we focus for a minute on the corporate products division, they're clearly now adding salespeople who are technical support people, they are gearing up their support programs to be much more responsive to the needs of the MIS people; our marketing people do executive briefings on our strategy for the next three to five years. We're trying to staff up to become strategic partners with these customers.

A specific example—we go to Kodak, and I sit down with the MIS director, and he says, "If you want to be our supplier of graphics software for the next three to five years, these are the features you've got to have. This is the connectivity you've got to have. We will commit to buy from you if you will do these things." So what they're saying is, they're not going to invent the product in-house, they're looking for someone who'll meet their needs. They define their needs and say, "If you meet them, you can be our supplier." That's what I mean by a strategic relationship. It's very pragmatic. We build what the

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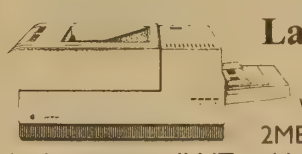

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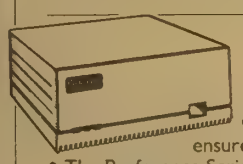

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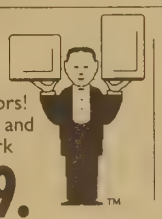

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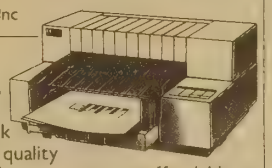

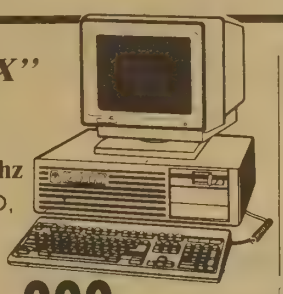

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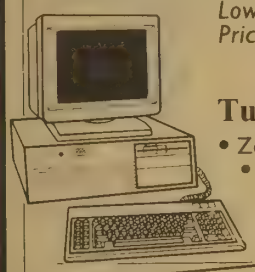

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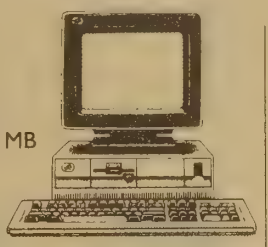

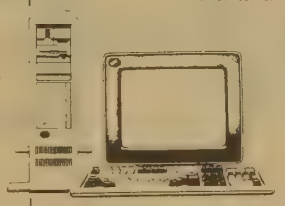

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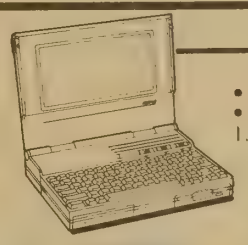

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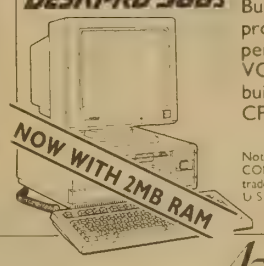

Model 1

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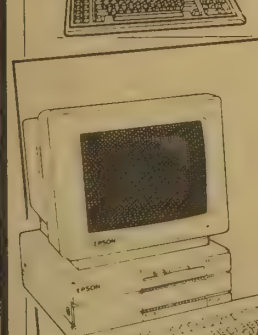

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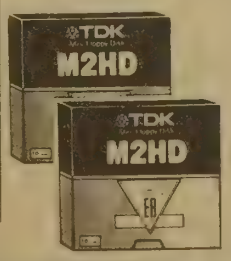

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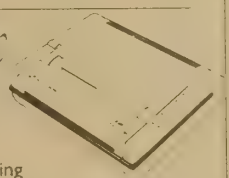

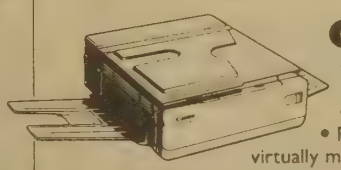

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286-20 MHz 0 Wait

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286-16 MHz 0 Wait

- Landmark =21
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- 230 W Power Supply
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DTK 8088 10 MHz	$69
286 6/12 MHz 0 Wait	155
286 8/16 MHz 0 Wait	235
286 8/20 MHz 0 Wait	295
386SX-16 MHz 0 Wait	325
386SX-20 MHz 0 Wait	335
386-20 MHz 0 Wait (w/o CPU)	295
386-25 MHz 0 Wait (w/o CPU)	335

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Everex 2400 Baud (Int)	115
Everex 2400 Baud (Int MNP5)	150
Everex 2400 Baud (Ext)	165
Everex 2400 Baud (Ext MNP5)	195
Everex Fax Modem (9600 Fax, 2400 Modem, MNP5)	275

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NEC ESDI 150 MB 18ms	950
Fujitsu ESDI 150 MB, 24 MS	795
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Maxtor 4380E ESDI 320 MB, 18 MS	1750
Maxtor 8760E ESDI 660 MB, 16 MS	2750
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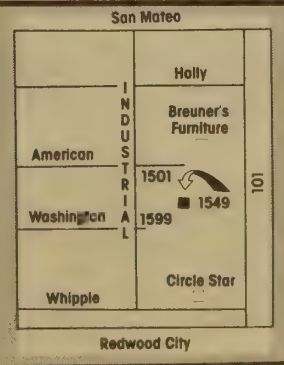

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(236) HUMOROUS DOS TRICKS/1 - CGA for most.
(1084) HUMOROUS DOS TRICKS/2 - CGA for some.
(256) DOS TUTORIAL V4.4 - Learn DOS easily.
(541) FLUSHOT PLUS V1.52 - Virus protection.
(816) SLIMMER V2.0 - Nutrition and dieting program.
(543) SOLVE-IT V3.0b - 29 financial analysis routines.
☛(428) AMTAX - '89 TAX YEAR - 1040, various schedules.
(166) ASTRO V2.06 - Great astrology. Req: 400K, 2 drives.
(137) SCHOOL MOM V3.4 - Math, art, music, etc. CGA.
(33.2) FILE EXPRESS V4.31 (2 disk set) - Easy database program. Lots of features. Req: 2 Drives.
(34) MATH CASTLE V1.01 - Math game. All ages.
(784.3) PC WRITE V3.03 .(3 disk set) - Word processor.
(317) MULTI ASSISTANT V1.04 - Calendar, finances, phone list, investments, inventory. Req: 384K, 2 drives.
(61) RAMBASE ACCOUNTING V4.12 - Fully integrated, menu-driven accounting package.
☛(456) PC-TAX89 V89.1 - Tax returns; Form 1040 and A-F, R, SE, and misc. forms. Req: 512K, 80 column printer.
(561) EXPRESS CHECK V3.05 - Budget, reports, print checks.
(810) BLACKJACK! V2.05D - Strategy, card counting, betting systems. Req: EGA, VGA, or Hercules. CGA not supported.
(421.2) BROTHER'S KEEPER V4.3 (2 disk set) - Genealogy; organize family tree; print info several ways. Req: 384K, 2 drives.
(266) HOME ENTERTAINMENT MANAGER - Organize videos, records, cassettes, & CD's. Req: 384K.
(26.2) BIG THREE V1.02 (2 disk set) - The ultimate World War II strategy game. Req: 512K, CGA, 2 drives.
(159) LOTTO # GENERATOR V3.0 - Track winning Calif. Lotto 6/49 numbers or generate random.
(302) AS-EASY-AS V4.00c - Powerful spreadsheet compatible with Lotus 123 files.
(585) RENTALS V2.04 - Rental management system; up to 9604 rental units, reports. Req: 420K, 2 drives.
(847.6) ONLINE BIBLE V3.01 (6 disk set) - Complete King James Bible with search capability. Req: hard drive.
(462) 4DOS V2.2 - Replacement for 'COMMAND.COM'.
(229) PC-RR - Like having a model train yard in your garage; 42 tracks. Keep them from crashing.
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(791) GRAB PLUS V5.5 - Memory-resident screen grabber / address envelope printer. Req: hard disk.
(239) FRACTAL VGA DEMO - Self-running demo; display stunning fractals! Req: 512K, VGA.
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In terms of other hardware and software companies, though, your wagon is not particularly hitched to anybody else's—except maybe Intel's—in terms of strategic partnerships?

Our strategic partnerships are customer relationships, as opposed to coworkers in the industry. That's a world, I think, that often produces very few results. I don't have time to waste motion. We're a $100+ million company with 554 employees.

"Everyone takes some risk—you don't get ahead by taking the safe bet all the time. You want to be best of breed, and you want to be there in the first wave of companies, because once standards get set it's almost impossible to break them."

I notice that you have a significant presence in Europe.

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I saw that we can change the game over there. In the past, you had to put a warehouse in each country, sales and marketing in each country, support in each country. Very expensive, very slow, very time-consuming.

We think we can be very centralized because of 1992 and because of changes in the East bloc. To be specific, we think that next year we'll be able to have one 800 number for support for all of Europe. I'm not being facetious when I say that there'll be three phones, a green one, a white one, and a red one.

By language?

The green one rings, you pick it up and speak French. The red one rings, you pick it up and speak Spanish. The white one rings, you pick it up and speak German. The customer will never know that it's centralized

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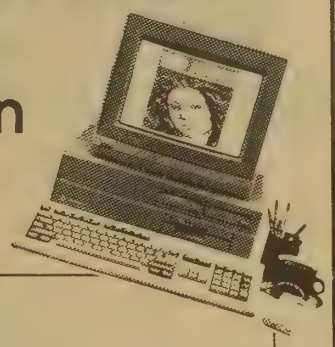

Price List

Components

Model	Description	List Price	Special Price
A500	512K CPU	$799	$479
A2000C	1Mb CPU	$1,899	$1,139
A2000HD/1	CPU w/40Mb HD	$2,699	$1,619
A2500/30	68030 CPUw/HD	$4,699	$2,819
A1084	RGB Color Monitor	$399	$259
A501	512K expansion for A500	$199	$129
A590	20Mb HD & @Mb RAM	$799	$519
A2058	8Mb board w/2Mb RAM	$799	$519
A2630	68030 card w/2Mb RAM	$2,195	$1,429
A1010	3.5" external floppy	$299	$189
A2010	3.5" internal floppy	$199	$129
A2091-40	Controller w/40Mb HD	$899	$589
A2088D	XT PC Bridgeboard	$699	$449
A2086D	AT PC Bridgeboard	$1,599	$1,039
A1680	1200 Baud Modem	$149	$99
A2232	Multi-Serial Board	$399	$259
A2300	Internal Genlock	$399	$259
A520	RF Modulator	$49	$29
1402	B&W TTL monitor	$129	$79
1403	VGA monochrome monitor	$249	$149

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Model	List Price	Special Price
A500 System	$1,696	$799
Includes A500 CPU, A501 512K expansion, A1010 3.5" external drive, A1084 RGB color monitor.		
A2000/2/PC System	$3,196	$1,599
Includes A2000C CPU, A2010 2nd 3.5" internal floppy, A2088D XT Bridgeboard, A1084 RGB color monitor.		
A2000HD/PC System	$4,697	$2,579
Includes A2500HD/1 CPU, A2286D AT Bridgeboard, A1084 RGB color monitor		
A2500/30/PC System	$6,697	$3,679
Includes A2500/30 68030 CPU, A2286D AT Bridgeboard, A1084 RGB color monitor		
PC20-III-U1 System	$1,499	$819
Includes 640K 8088 CPU w/20Mb HD, 360K floppy, Microsoft® Works, 1352 Mouse, MS-DOS® Tutorial, GW BASIC		
PC40-III-U1 System	$2,395	$1,319
Includes 640K 80286 CPU w/40Mb HD, 360K floppy, Microsoft Windows, 1352 Mouse, MS-DOS® Tutorial, GW BASIC, AMI Word Processor		
Commodore 64 System	$499	$249
Includes C64 CPU, 1541-II disk drive, Test Pilot Software, Joystick		

You may be able to get a substantial discount on Commodore hardware. Public, private, and parochial schools at level K-12, colleges, and universities are eligible. Educators at level K-12 or at college and university level are eligible. College and university students are also eligible, but not students at high school level and lower.

Procedure

1. Request an Education Purchase Plan Order Form from Winners Circle Systems. Fill out the End User and Ordering Information sections.
2. Have the school verify your eligibility and sign the form.
3. Send the form to Winners Circle Systems for them to fill out and sign.
4. Make copies of the form for your records.
5. Send the original form, along with a certified check or money order (no personal checks) payable to Commodore Business Machines, Inc., to the following address: Commodore Business Machines, Inc. 1200 Wilson Drive, West Chester, PA 19380

Other Restrictions

This offer is available to END USERS only. You may not resell your computer for at least one year.

After March 31, individuals (students and educators) will be able to get a discount only on BUNDLED SYSTEMS or on COMPONENTS ORDERED WITH BUNDLED SYSTEMS. This restriction does not apply to institutions.

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You have manufacturing over there as well?

Right now it's all manufactured in the US, but we have a warehouse there. We expect to ship manufacturing there as well within the next 12 months.

What do you see as the big challenges ahead?

Well, we have a very successful $100+ million company. That was a milestone, getting this far. I see the opportunity to be a multi-hundred-million-dollar company. It's there.

Software will continue to take more and more of the technology dollar in the next decade. Therefore there's ample opportunity to grow. We must build a company that can grow. That means putting the right managers in place at the executive level, it means putting the right training programs in place for existing managers, it means the right recruiting programs. That means building the infrastructure that can handle growth. It also means putting in place the strategic process that can direct and guide the company toward new markets, rather than just being a hits product company.

So I think building an organization, a structure, and a strategic planning process are very fundamental things that we've got to do that we have not done formally before. If you will, it's going from adolescence to adulthood.

Always an awkward transition.

It is. Companies can accelerate right through them, like a Sun or an Apple, or a Lotus or a Microsoft, but I argue that they've always got to go back and develop those things, it's only a question of when. It's not a question of if.

What about Japan?

They have come to us on several occasions and asked us to do joint ventures with them, to convert our products to Japanese. I don't want to help 'em. I don't help create a competitor downstream, so I've had mixed emotions about working with them on a joint-venture basis.

As far as the Japanese domestic market goes, it's not so big that we have to be there. It's a good market, but not particularly compelling right now. Not something I have to do to be successful.

I haven't put into perspective their potential as a competitor. I don't see a reason why they couldn't be viewed as a competitor someday; I'm not aware of it so far. I think we should take them seriously as a potential competitor and see what happens.

Are you at all disappointed in the relatively slow adoption of OS/2?

Oh, I'm disappointed, but I'm also a realist. The Macintosh looked pretty grim for the first couple of years too. When you put that in perspective—it was 1984-86 when people said the Macintosh was dead because there was no software for it. No spreadsheet, things like that.

I also know that history has rewarded very handsomely those who were willing to take a risk—Aldus with PageMaker on the Macintosh, Microsoft with its position on the Macintosh, they took a risk on a platform. Some of the Windows companies have done pretty well.

Everyone takes some risk—you don't get ahead by taking the safe bet all the time. You want to be best of breed, and you want to be there in the first wave of companies, because once standards get set it's almost impossible to break them.

So you take a risk. I'm not that concerned or disappointed. It is what it is.

What do you think are the main things interfering with its being more widely adopted?

Well, we haven't shown 'em why. We haven't shown 'em the applications to justify it. It's just taken us a couple of years to build 'em—these are multi-megabyte applications, they're huge. Hundreds of thousands of lines of code. We never really sized how big they were going to be, and so we just got into a two-plus year development cycle. Let's see whether history proves it was worth it. I believe it will.

From a user standpoint, it's still essentially a vaporware project, but the developer community keeps saying it's not time to write it off.

No. It's too soon to do that.

One developer told me that it's already quite entrenched in environments where they expect the MIS department to write all the applications anyway.

I think that's probably right. We've seen it as the applications development platform of choice in MIS. So yeah, I think the shrink-wrapped software will follow, and it's over the next 12 months that that's going to happen. ■

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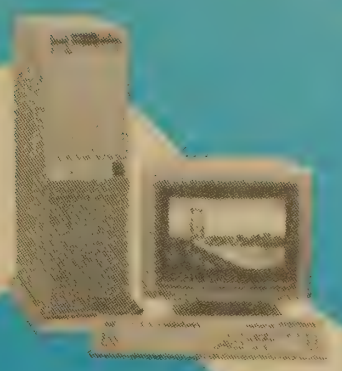

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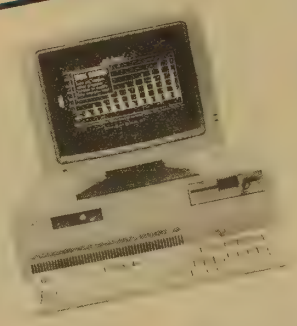

Hi-Q 20 MHz 386 SYSTEM
Landmark = 25 SI = 23

- 1 MB RAM Expandable to 8 MB On-board
- 1.2 or 1.44 MB Floppy Drive
- 1:1 Interleave Hard/Floppy Disk Controller
- 80387 Socket
- 2 Serial, 1 Parallel, 1 Game Port
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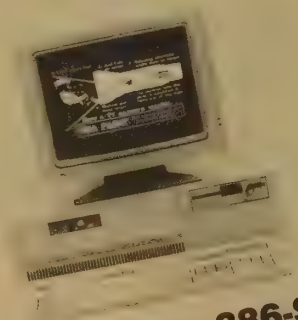

Hi-Q 16 MHz 386-SX 40 MB SYSTEM
Landmark = 19.5 SI = 18

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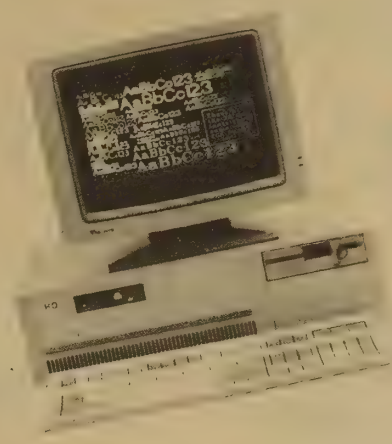

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- 1.2 or 1.44 MB Floppy Drive
- 1:1 Interleave Hard/Floppy Disk\Controller
- 80387 Socket
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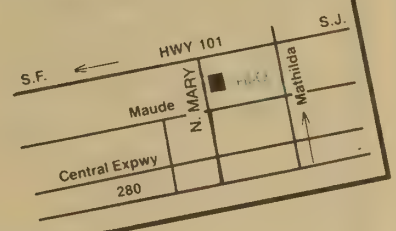
- Real Time Clock/CMOS Memory w/Battery Back-up
- 230W Power Supply & Quality Case Holds 5 Drives
- 101 Key Enhanced Keyboard
- Supports – MSDOS, OS/2, PC-MOS/386, UNIX, XENIX, DR-DOS, Concurrent DOS 386



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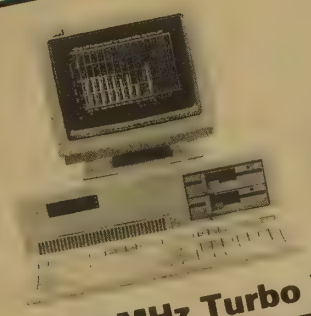

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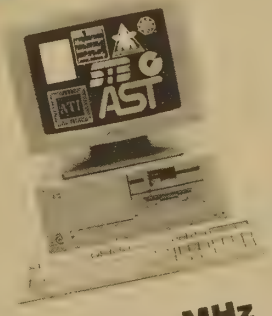

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Landmark = 15.9 SI = 13.4

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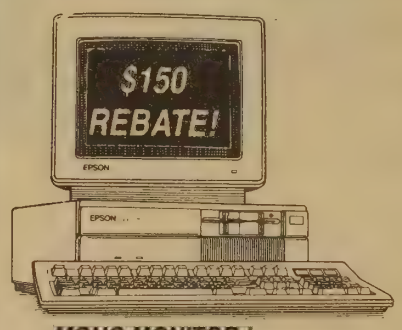

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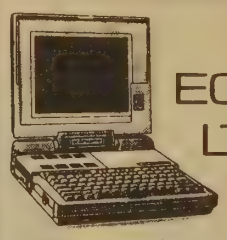

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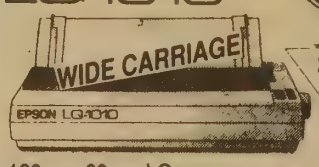

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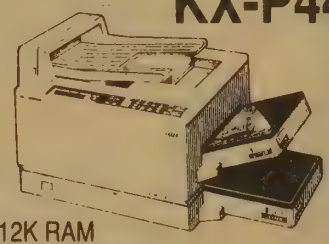

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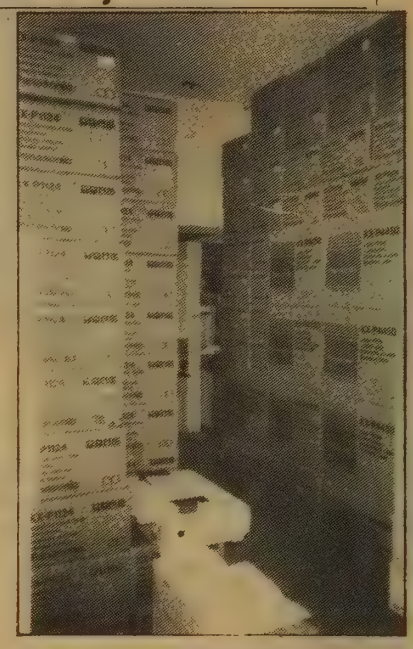

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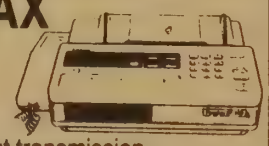

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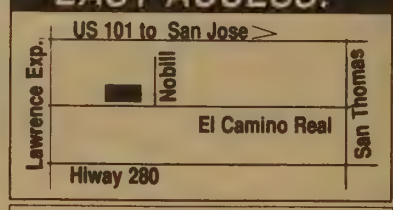

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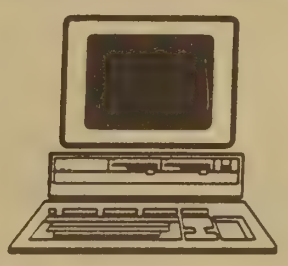

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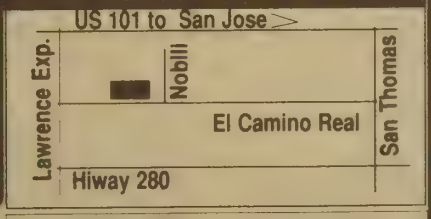

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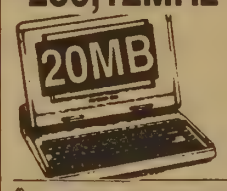

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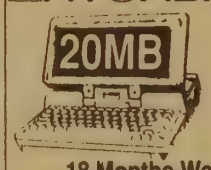

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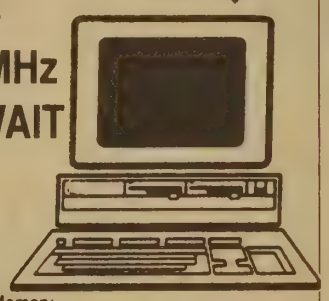

• 512K Memory
• FDD/HDD Controller
• Teac 1.2 MB Floppy Drive
• AT-Style Keyboard
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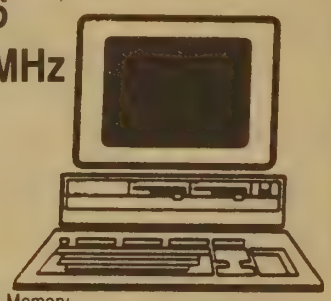
16MHz version.....$699

386 20MHz



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• AT-Style Keyboard
• Monitor not included

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386 33MHz

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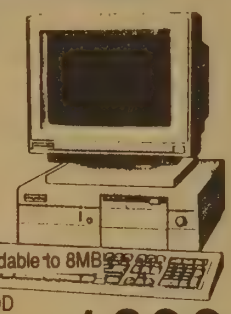

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	40MB 251-1 28ms	345
	30MB 138 3.5"	289
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	109MB RLL 25ms	895
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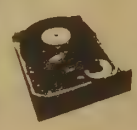

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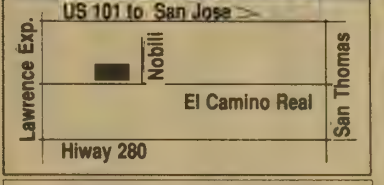

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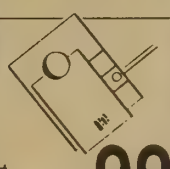

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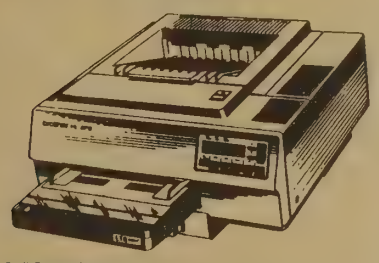

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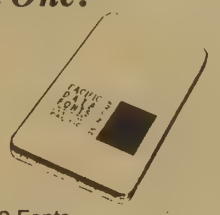

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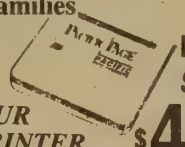

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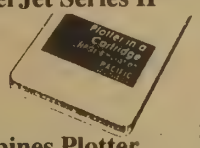

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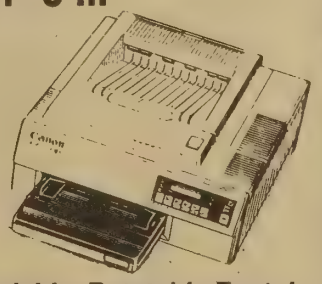

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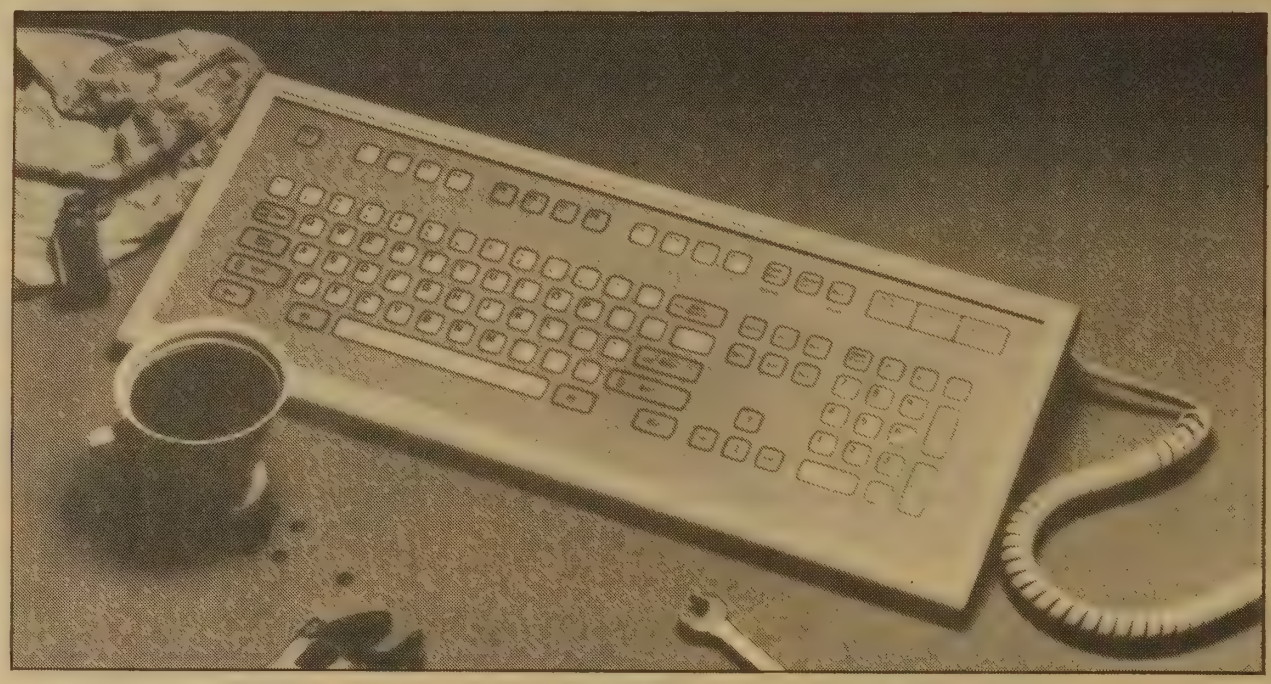


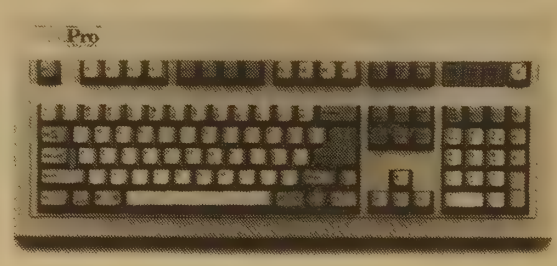
Honeywell's Child-proof Keyboard

Honeywell has introduced a new 101-key, touch panel keyboard, the 101TC, for use in manufacturing, laboratory, medical, and other harsh environments, like the home office. The keyboard is sealed to protect it against dust, grime, moisture and liquids. The 101TC is plug-compatible with XT, AT and PS/2 compatible computers. It includes status LEDs for Caps Lock, Num Lock and Scroll Lock. A metal snap dome disc gives the operator tactile feedback. Audible feedback is also available.

The touch panel itself is completely flat, with embossing to facilitate positive finger positioning. Subsurface printing techniques increase durability. Custom graphics are also available, providing for any format, type style, graphic symbol key configuration or logo to be incorporated.

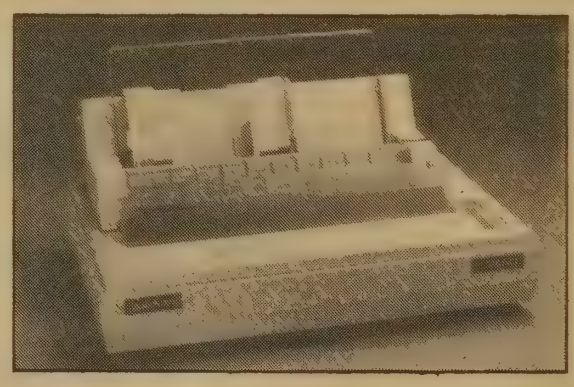
The 101TC keyboard carries a two-year warranty. ($282.50) Honeywell Inc., Keyboard Division, 4171 N. Mesa, Building D, El Paso, TX 79902. (915)543-5503.

Professional Mac Keyboard From Key Tronic



Key Tronic Corporation, a leading manufacture of computer keyboards and other input devices, has a new Professional Series keyboard compatible for use with Macintosh SE, SE/30, II, IIx and IIcx. The 105-key layout MacPro includes a large L-shaped **Return** key, a large **Delete** key, and **Ctrl**, **Option** and **Command** keys on both sides of the space bar. The numeric key pad layout is similar to Apple's desk accessory calculator, and features a **Power On** key with LED status indicator.

The MacPro uses Key Tronic's capacitance key switch technology, giving it a reliability rating of 100-million key strokes. It comes with a three-year limited warranty and unlimited toll-free technical support. Included with the MacPro is the Tempo II keyboard macro software from Affinity Microsystems, Ltd. Tempo II allows users to record text strings, button clicks, file operations, and keystrokes and mouse strokes for playback as a single command. ($197) Key Tronic Corporation, PO 14687, Spokane, WA 99214-0687. (509)928-8000.



Plotting Without A Pen

The RasterPro 720 color graphics penless plotter, by Da Vinci Graphics, provides an alternative to conventional plotters. Da Vinci's technology converts vector-based plotter instructions to an optimized raster printing format through a series of unique image processing and rasterization schemes. Using no pens, it cannot skip, clog or smear during the plotting process, and it saves on the cost of pens and special plotter paper normally required. The RasterPro 720 provides plots up to ten times faster than pen plotters producing high resolution output, depending on plot complexity. Offering four selectable line widths—0.2 mm to 1.3—a palette of 15 colors, and an addressable graphics resolution of 720 dots per inch (dpi), the RasterPro 720 with a plotter's margin of error of 0.0 mm results in perfect color registration. Also offered is a high draft speed mode (180 or 360 dpi) in color or monochrome that produces check plots in a fraction of the time required to produce presentation-quality output. In addition, the user can usually replot in high resolution mode (720 dpi) with a single command and no central processing unit involvement.

Da Vinci has targeted computer-aided design environments that require precise hardcopy design specifications. Specific CAD markets include mechanical engineering, electrical engineering, and architectural and engineering construction. Other markets include mapping and engineering analysis. The RasterPro 720 is distributed through authorized Da Vinci Graphics distributors who in turn market the product to VARs and resellers.

Da Vinci has also entered into a service agreement with Fujitsu Customer Service of America, Inc. (FCS) to service the penless plotter. The basic warranty covers four months on-site service or one year of return-to-depot service at no charge to the customer. As part of its normal return-to-depot service procedure, FCS will completely refurbish the RasterPro 720 should it fail for any reason under basic or extended warranty coverage. ($3495) Da Vinci Graphics, Inc. 870 Hermosa Drive, Sunnyvale, CA 94086. (408)737-8800, Fax (408)737-8910.

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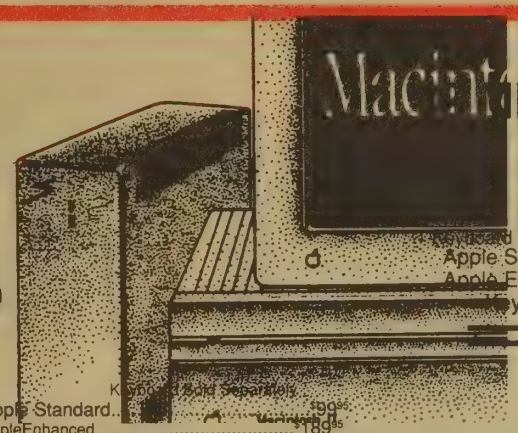

Keyboard Sold Separately
Apple Standard $99.95
AppleEnhanced $189.95
Keytronics MacPro Enhanced $129.95

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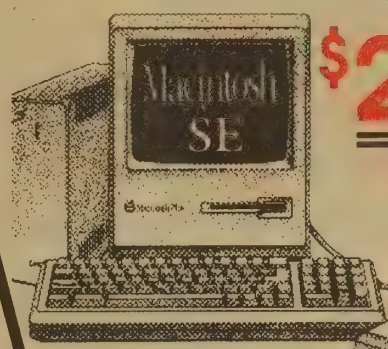

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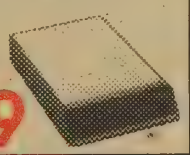

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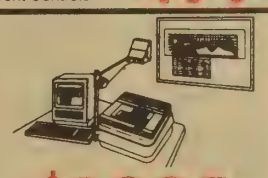

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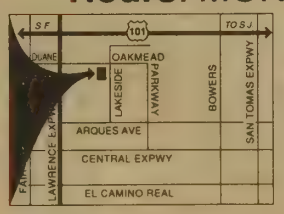

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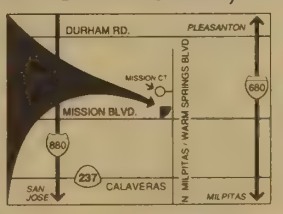

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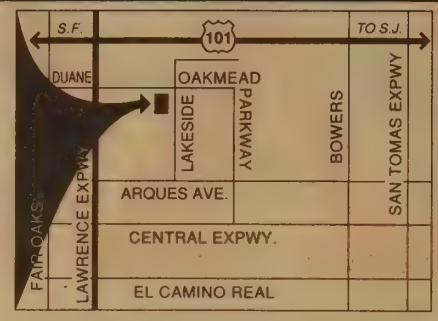

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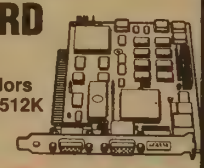

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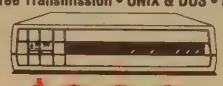

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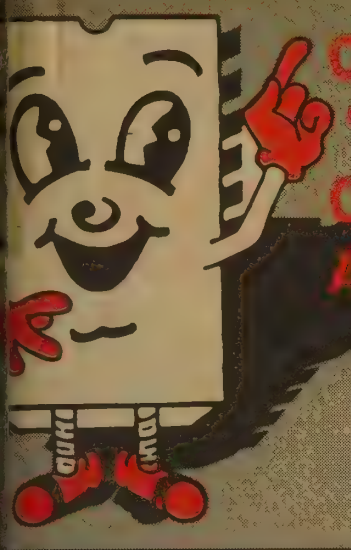

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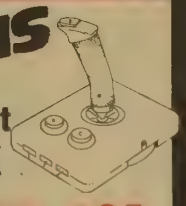

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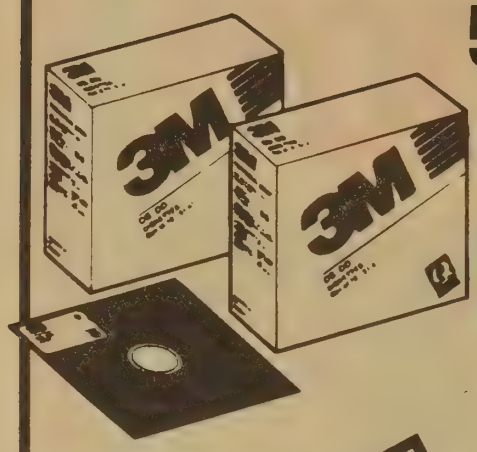

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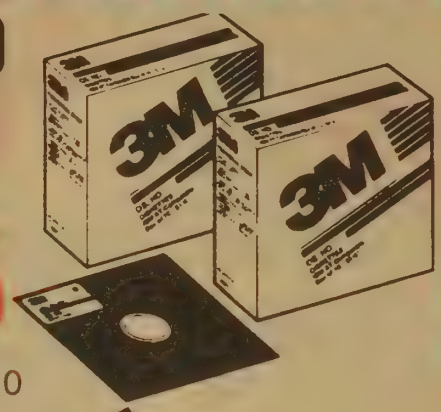

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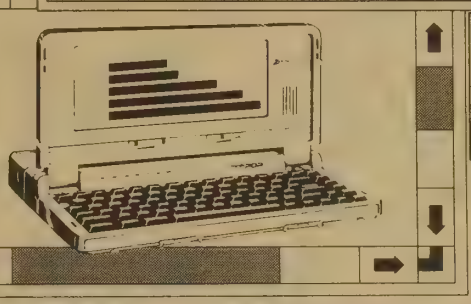

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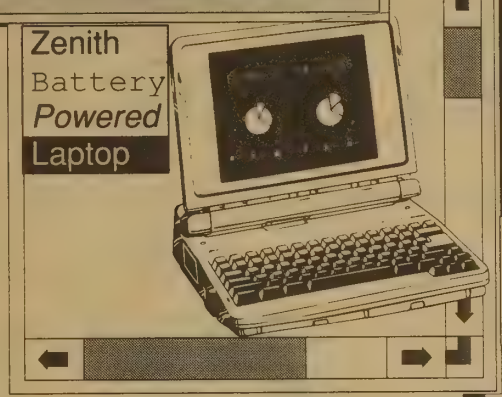

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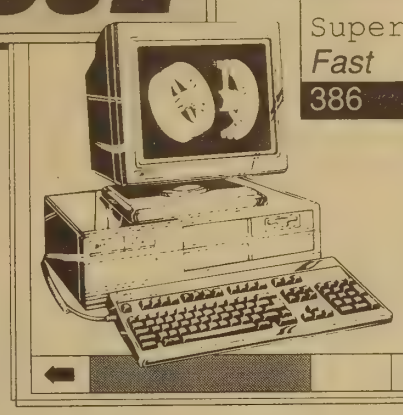

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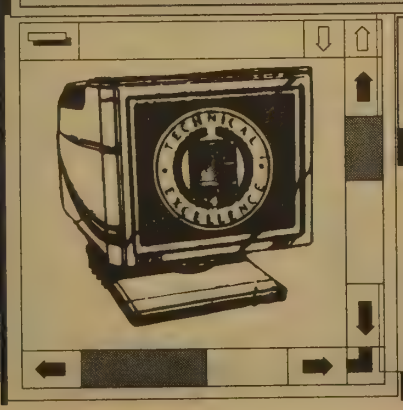

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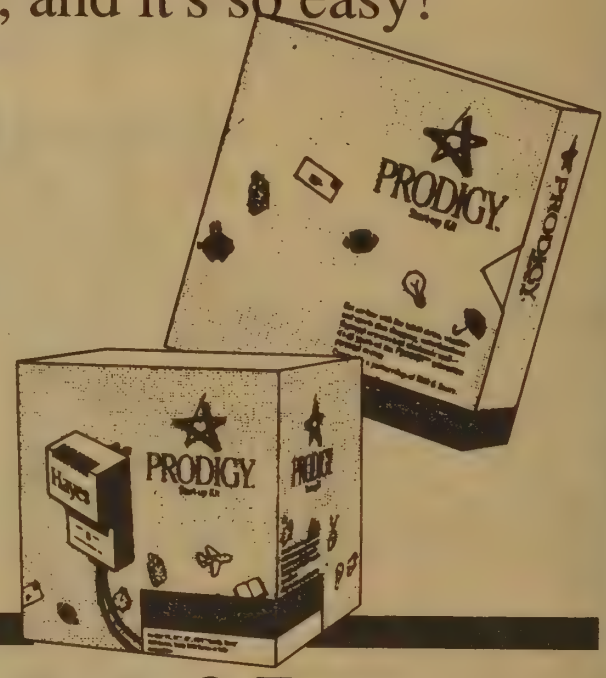

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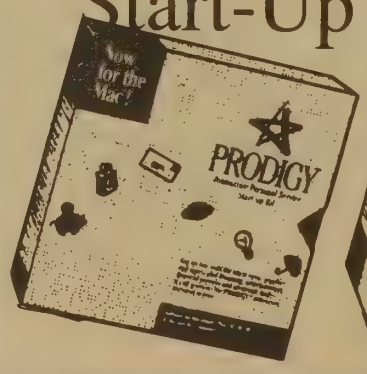

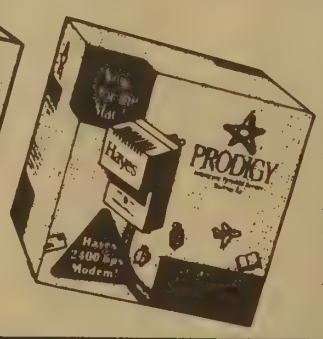

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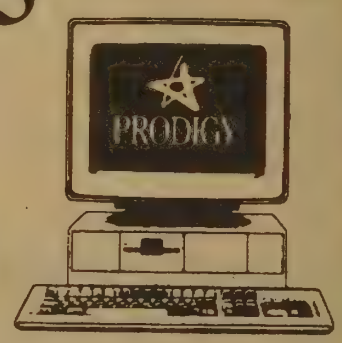

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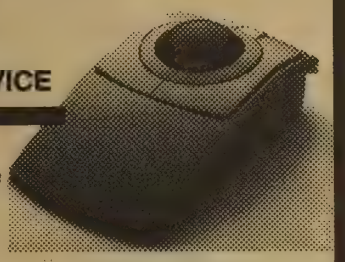

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- •One year warranty

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MICROCOMPUTER POINTING DEVICE

FastTRAP extends the hardware capability of pointing devices to new levels. It enhances the operation of the two-axis graphical user interfaces found in many current programs such as Windows™ applications, word processors, spreadsheets, desktop publishing sytems, control applications, games, etc.

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- •High resolution trackball (200 pulse/inch)
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- •IBM®PC, PC-XT, PC-AT, PS/2 and other compatibles
- •Hardware variable resolution of 50, 100 or 200 points per inch plus cursor drag control in mouse emulation mode.
- •Includes MAP device driver with ballistic gain and KeyMAP™ keyboard emulator
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THE ULTIMATE HOME CONTROL SYSTEM

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Instantly controls 8 lights & appliances throughout the house with the push of a button - From one convenient location.

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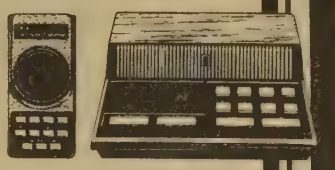

Controls your lights and applications from any telephone, wherever you are! Transmit control signals with your 3-digit security code to control up to 8 appliances.

COMPUTER INTERFACE

The Home Control Interface is a very sophisticated timer which is programmed from your computer and then disconnected. Simply plug lamps and appliances into the modules. Program different events for different days. You can even program your lights to dim at a predetermined time. If you don't have a computer at home, you can program the interface at work, pop in a nine-volt battery and bring the Powerhouse into your home! The Interface, available for IBM, Mac, Apple and Commodore, comes complete with software and connecting cable. After programming, it can be disconnected to free up the computer for everyday uses.

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THE ULTIMATE REMOTE CONTROL

Imagine being able to turn on the lights in your house from your car as you enter your driveway. You'll never have to enter a dark house again. You can keep a Transmitter by the bedside to turn on all the lights if you hear a suspicious noise at night. You can mount a transmitter on a wall and have one in every room to control any light or appliance from any room in your house.

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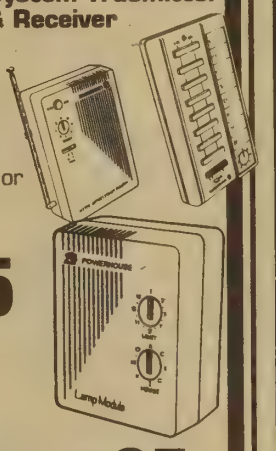

LAMP MODULE

Receives signals from the timer or mini-controller to turn lamps on and off anywhere in the house. Full-range dimming is possible from X-10 manual controllers.

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APPLIANCE MODULE

Receives signals from the timer or mini-controller to turn on or off a TV, air conditioner, stereo and other appliances anywhere in the house.

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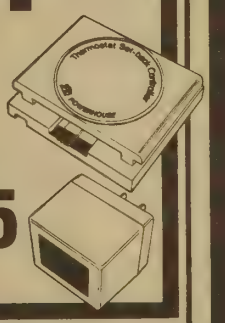

Mounts on the wall under your existing thermostat & plugs into the appliance module. Works with any thermostat so you can automatically set back heating/ac using the timer, or remotely turn up heat/ac before you get home using the telephone responder.

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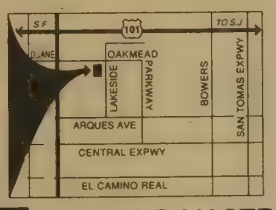

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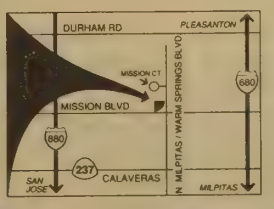

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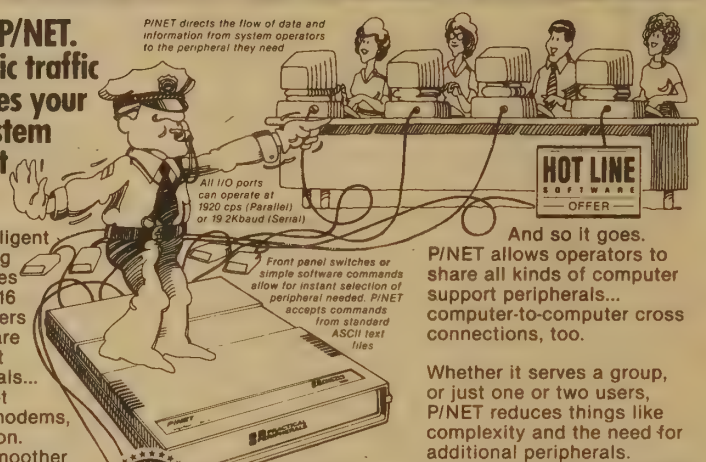
P/NET directs the flow of data and information from system operators to the peripheral they need
All I/O ports can operate at 1920 cps (Parallel) or 19.2Kbaud (Serial)
HOT LINE SOFTWARE OFFER
Front panel switches or simple software commands allow for instant selection of peripheral needed. P/NET accepts commands from standard ASCII text files
PRACTICAL PERIPHERALS 5 YEAR GUARANTEE

P/NET is an intelligent peripheral sharing system that makes it easy for up to 16 different computers to effectively share up to 30 different support peripherals... laser printers, dot matrix printers, modems, plotters, and so on. The result is a smoother flow of work, and reduced peripheral purchases.

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Link P/NET to a modem pool and operators never have to wait in line. If one modem is in use, P/NET automatically transfers the user to a modem not in use.

And so it goes. P/NET allows operators to share all kinds of computer support peripherals... computer-to-computer cross connections, too.

Whether it serves a group, or just one or two users, P/NET reduces things like complexity and the need for additional peripherals. Which means P/NET actually increases overall efficiency and productivity.

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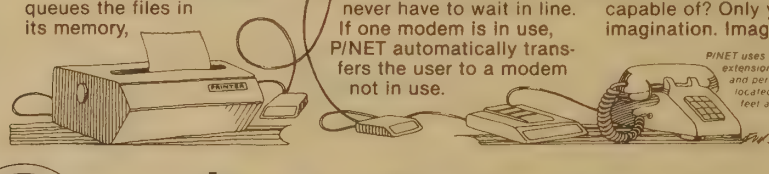

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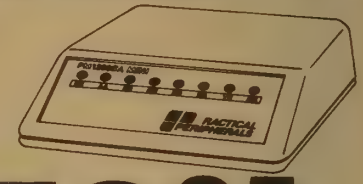

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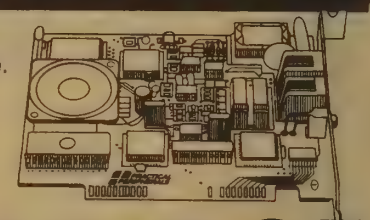

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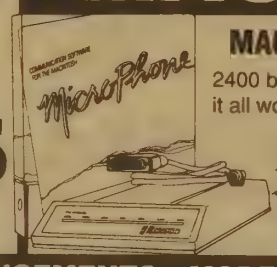

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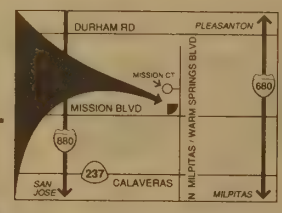

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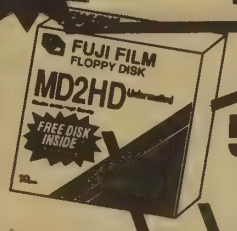

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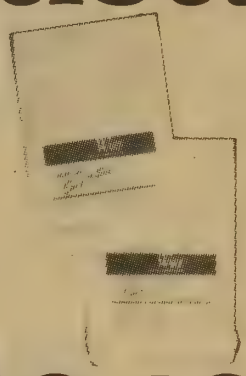

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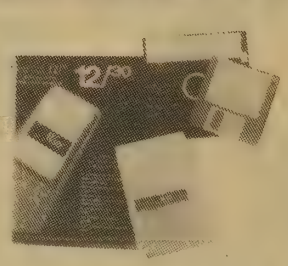

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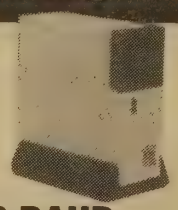

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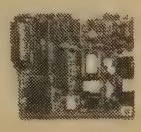

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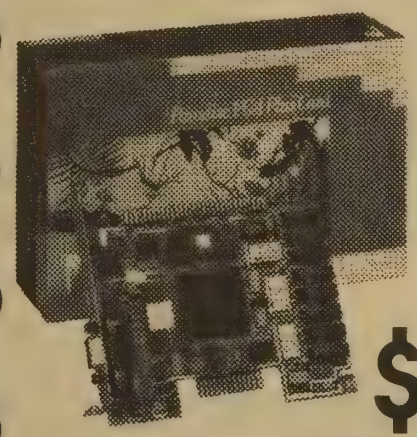

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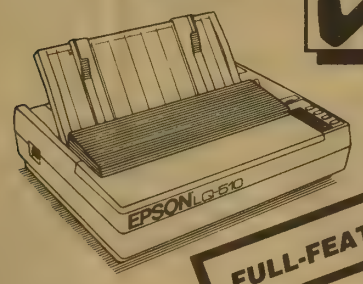

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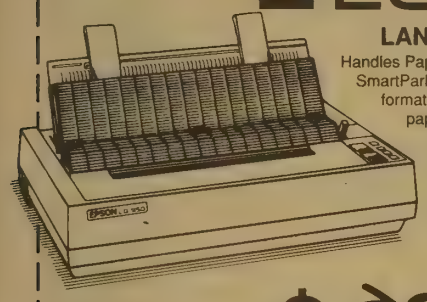

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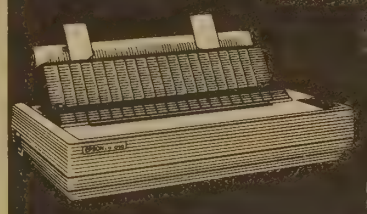

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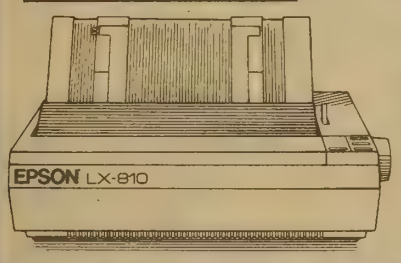

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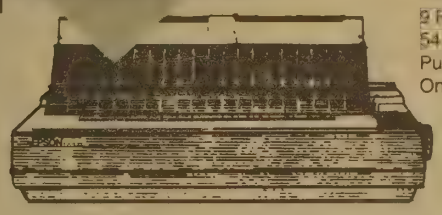

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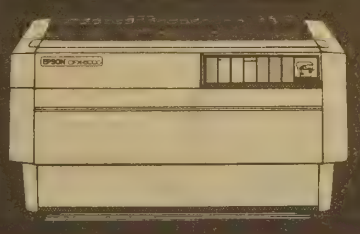

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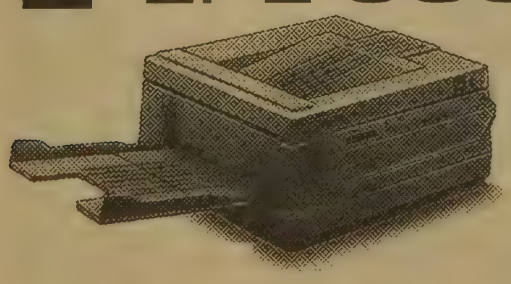

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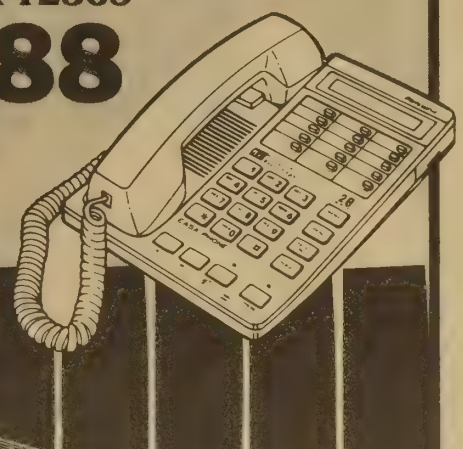

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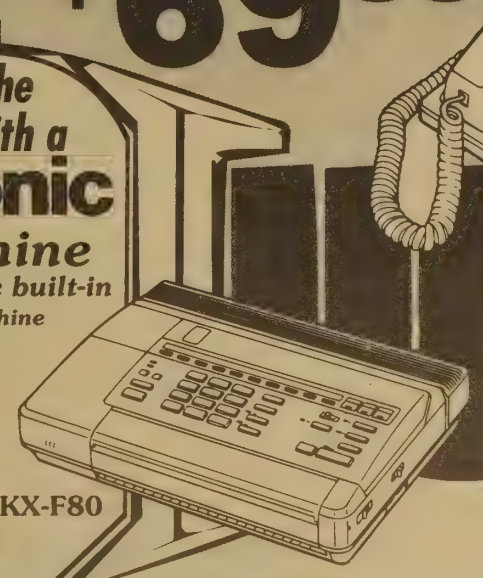

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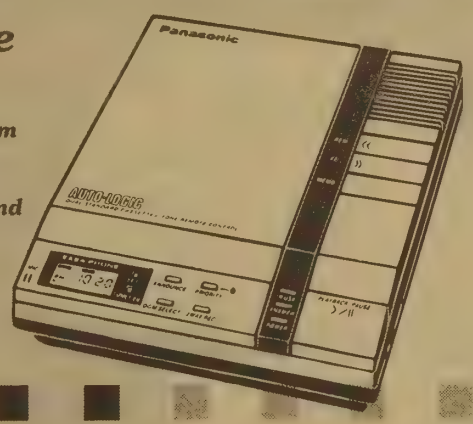

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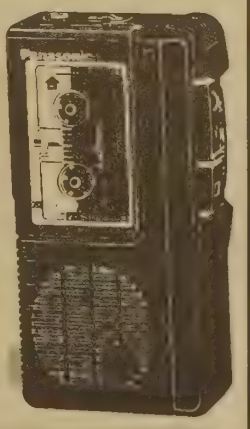

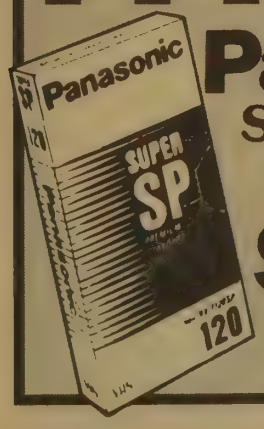

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SECOND OF TWO PARTS

Object-Oriented Languages

An Overview

By Birrell Walsh

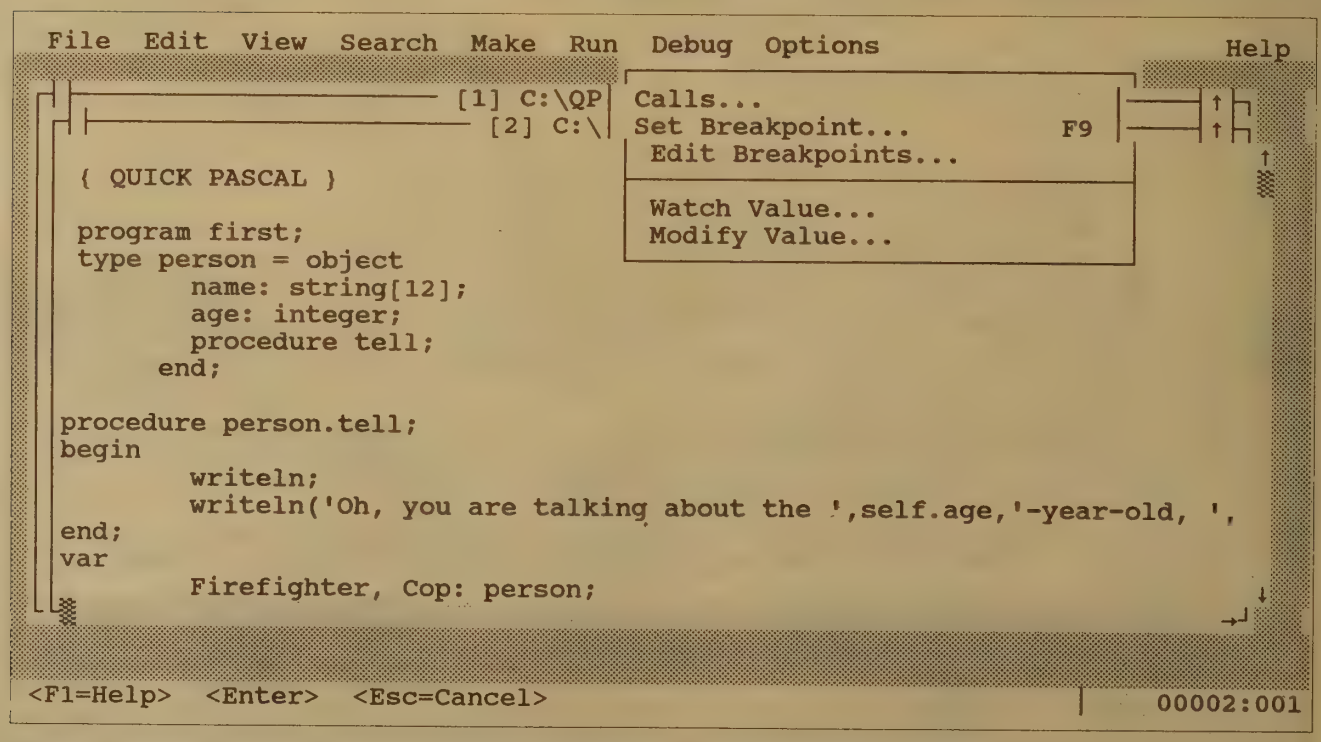
Last month we talked about the philosophy of object-oriented languages. You'll recall that they have several characteristics, called "Encapsulation," "Inheritance" and "Polymorphism."

Objects are an extension of the idea of data-structures, which includes not only data but also functions and procedures. "Encapsulation" means that objects hide both data and procedures inside them. In a fully object-oriented system, data can be obtained from an object only by using a procedure from the same object. Each object handles its own input and output to the system, and becomes in effect a mini-program. Encapsulation gives superb data security.

"Inheritance" means that new classes of objects can be made out of old classes of objects. The new objects have all the data-structures and the procedures of the old objects—"by inheritance"—in addition to special data and procedures specific to the new object. Inheritance means that old programming can be reused; object classes are the model for new objects.

With "polymorphism," different objects can respond with different behavior to the same command. The languages have "many forms" of responses to the same symbol. In most languages, integers and "floating point" (or "real") numbers respond to arithmetic commands similarly, even though they are really quite different kinds of numbers. That is polymorphism.

With full polymorphism in an object-oriented language, you as the programmer can invent new kinds of data types and teach them how to respond to commands. You might create a class of complex numbers whose members have two numbers each (the real and the imaginary components). In a fully object-oriented language, you can write special procedures for the class of complex numbers which allow you to add, subtract, and multiply the numbers. You can use the same symbols (+, -, and *) that you use for addition, sub-



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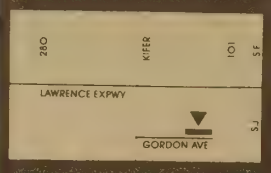

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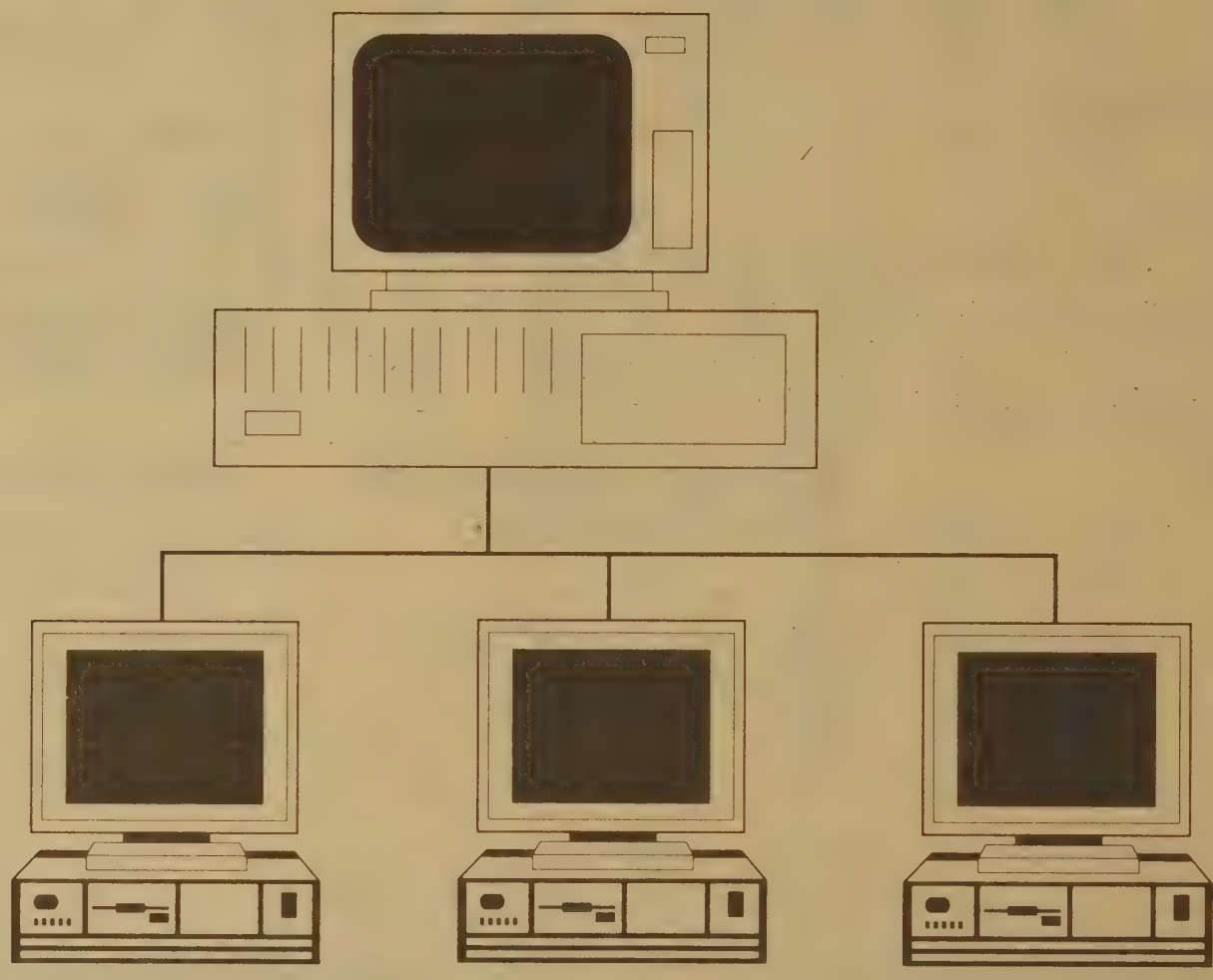

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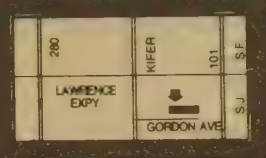

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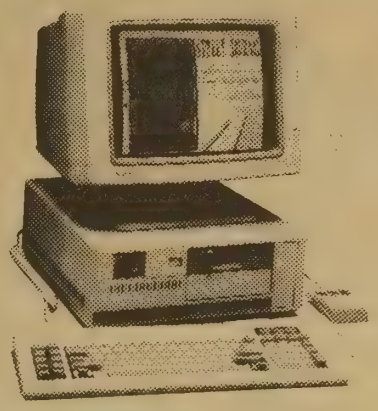

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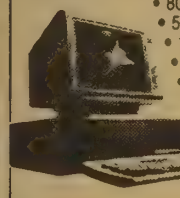

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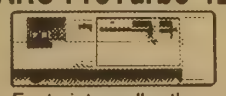

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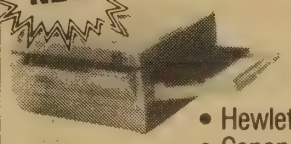

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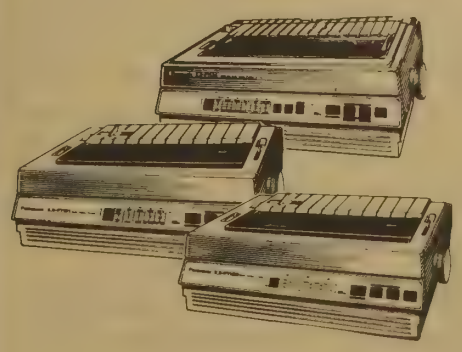

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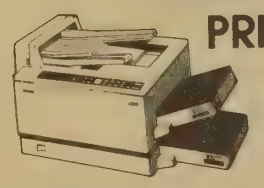

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Since Smalltalk won't let you fall back on the procedural programming to which you may be accustomed, you are forced to think in terms of objects. Work in Smalltalk will teach you the concepts of OOPS faster than any other language.

traction and multiplication for other numbers. The language will respond one way if the objects on either side of the "+" are integers, and a different way if they are complex numbers.

OOPS are intended to give excellent data security, a great deal of flexibility, and reusable code. They also allow a project to be broken into many subprojects, with each team working on the objects of that subproject.

This month we will look at specific languages that embody this philosophy. Only a few of the languages have all the object-oriented features implemented. Some do not have fully encapsulated objects and data security. Others have not completely implemented polymorphism. All of them have at least the property of inheritance.

Smalltalk

Smalltalk is the oldest of the object-oriented languages in wide use. Smalltalk is also a parent of the graphic interface, dating back to Xerox PARC.

Smalltalk is more than just a pretty face. It has developed speed and power over the years, and been ported from mainframes and minis to microcomputers. We examined Smalltalk/v, Digitalk's full implementation of the language.

The other languages examined here make objects optional, because they are object-oriented extensions of existing languages. In Smalltalk/v you *must* use objects, because the only things that exist in Smalltalk are objects. Characters, strings, integers, real numbers, graphic entities—all are objects that send and receive "messages." "Messages" are requests from one object that a second object run a procedure and return the results.

Smalltalk is surprising the first time you use it, because you do not exactly "write a program." Instead, you build object classes that will meet your needs, and objects made from those classes act as your agents. Since you cannot fall back on the procedural programming to which you may be accustomed, you are forced to think in terms of objects. Work in Smalltalk will teach you the concepts of OOPS faster than any other language.

If you wanted to work on a problem that involved things organized in a ring, for instance, your first act in Smalltalk would be to create an object of that name. You would not start writing code immediately. Instead, you would open a window called "the class hierarchy browser." It lets you look at all the classes of objects that are already defined. You would be searching for an object similar to what you want that could serve as a "parent" for your new class.

Say you chose the "list" as a parent. You would make rings be descendants of lists, and the Browser would show the parentage in the hierarchy of objects. Then you would modify the procedures of the new class until you had a working ring-object. Some of its abilities would be like its parent, the list. Some would be unique to it.

Since Smalltalk's way of thinking is new to most programmers, we can be grateful that there is an excellent tutorial with many examples included with Smalltalk/v. You can learn this most object-oriented of all languages step-by-step.

Smalltalk/v is available for both the Mac and DOS machines. You can create objects that are portable between the machines. In fact, you could network the machines together and let them work together in a two-platform Smalltalk environment. I for one wish that Smalltalk/v were the common operating-system/language for both machines.

Smalltalk/v $99.95
Smalltalk/v 286 $199.95
Smalltalk/v for the Mac $199.95

Digitalk
9841 Airport Boulevard
Los Angeles, CA 90045

```
   File    Edit    Run    Compile    Options    Debug    Break/watch
                                  Edit
      Line 16    Col 1    Insert Indent
                                                  Add watch          Ctrl-F7
                                                  Delete watch
{ TURBO PASCAL }                                  Edit watch
                                                  Remove all watches
{///////////////
//                                                Toggle breakpoint  Ctrl-F8
// The object "location"                          Clear all breakpoints
//                                                View next breakpoint
///////////////}

type location = object
          x,y:integer;
          procedure Init(InitX, InitY: integer);
          procedure SetX(NewX: integer);
          procedure SetY(NewY: integer);
          function GetX: integer;
          function GetY: integer;
     end;
procedure location.Init(InitX, InitY:integer);
                                  Watch

F1-Help  F5-Zoom  F6-Switch  F7-Trace  F8-Step  F9-Make  F10-Menu
```

Borland's latest Turbo Pascal, 5.5 is the language of choice for many developers.

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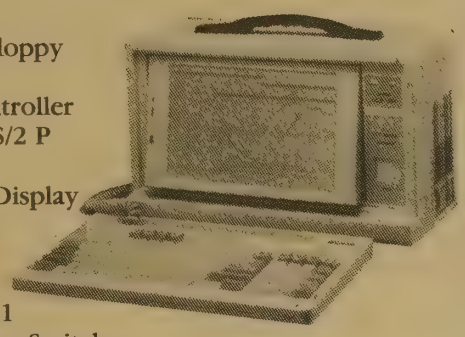

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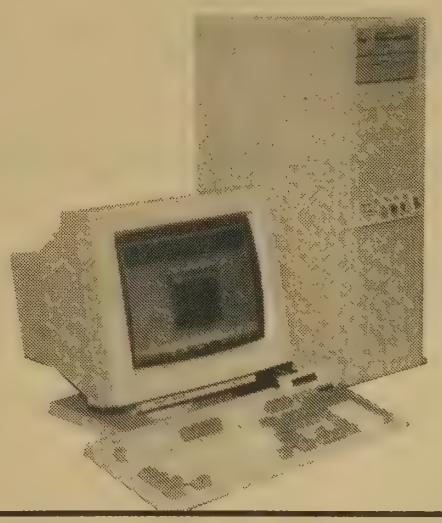

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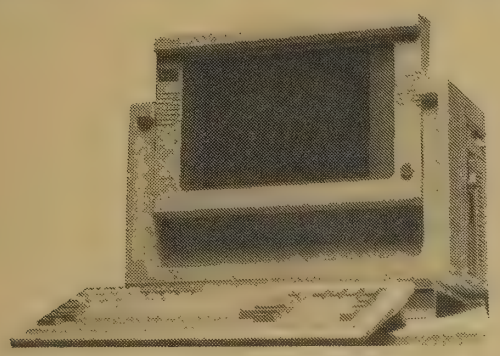

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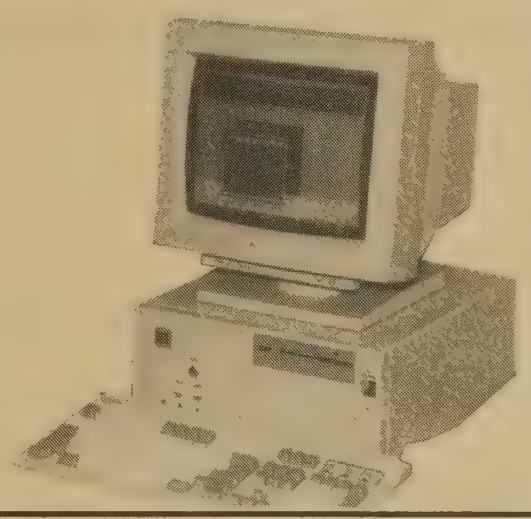

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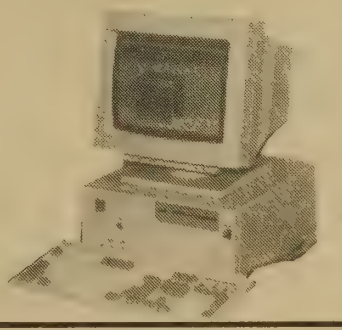

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Objects which inherit from a parent object will inherit the definitions their parents had for variables and functions, just as a citizen of California inherits federal rights through citizenship in the state of California.

Turbo Pascal 5.5 And Quick Pascal

While Smalltalk requires the programmer to use objects, other languages merely permit it. In most cases, those languages are traditional programmer's tools with an object facility added.

Turbo Pascal 5.5 from Borland and Quick Pascal from Microsoft arrived on the market simultaneously. Both permit, but do not require, the programmer to use objects in program design.

The genealogy of these two languages is complex: Microsoft already had a Pascal when Philippe Kahn of Borland came along and marketed his wildly successful, low-cost Turbo Pascal for DOS (November 1983). Meanwhile, in another area, Apple was marketing Object Pascal for the Macintosh. Microsoft decided to market Quick Pascal, a clone-plus of Turbo Pascal. It is a clone because it will run most Turbo-Pascal code. It has an object-oriented extension based largely on Object Pascal—that's the "plus." Then Turbo Pascal came out in its version 5.5, with a different object-oriented extension based in part on Object Pascal and in part on C++, an extension of C. Both Quick Pascal and Turbo Pascal 5.5 are compatible with Turbo Pascal 5.0, but not with each other. Neither is compatible with Microsoft's old Pascal. Quick Pascal from Microsoft is cheaper than the formerly low-cost, now midrange Turbo Pascal, and of course cheaper than Microsoft's own Microsoft Pascal, which is no longer Microsoft's only Pascal. Got that?

The result is that there are suddenly two object-oriented Pascals in the marketplace for DOS machines. Both are good. I would give Microsoft a slight edge for interface and a large edge for help facilities. Borland's Turbo Pascal 5.5 is a better language overall, with better documentation; it is likely to be supported by more third-party developers. Borland includes a book with Turbo Pascal 5.5 which is a *superb* introduction to the whole idea of object-oriented programming.

The new Pascals can be used without objects if you choose. If you do choose to use objects, you define them as a new sort of record. The record has the customary data fields. In addition, the record has functions and procedures. Calls to those functions and procedures are the equivalent of the messages of Smalltalk. Instead of saying

StartingPoint show

as in Smalltalk, you would say

StartingPoint.show

using the dot notation which Pascal uses for records. In Turbo Pascal 5.5, objects can be stored in the data segment or be dynamically allocated. In Quick Pascal, they can only be dynamically allocated.

Neither Pascal enforces data-hiding. That is, you can read the contents of an object's data without using the object's own functions. If you want to know the value of StartingPoint's X coordinate, you can just say **"i := StartingPoint.X"** as with any other record. I judge this to be a serious deficit in both languages. It means a breach in data security. The re-definition of operator names—polymorphism—is limited to function and procedure names. You cannot redefine "+" for a new data-type, as you can in Smalltalk, C++, and Lisp.

If you are a user of Turbo Pascal, these Pascals will allow you to try out the concepts of object orientation and still keep all of your old code. If you are new to object-oriented languages and wish to learn good OOPS habits, neither Pascal will provide the best opportunity. Data security is leaky and polymorphism is limited.

Turbo Pascal 5.5 $149.95

Turbo Pascal Professional $250 (includes Turbo Assembler and

```
File Move Edit Blocks Delete Search Other Record Playback Text 1 2 3 4 5
cOmpile Compare Dos Print                                        no file 1
──────────────────────────────────────────────────────────────────────────

// ZORTECH C++ Compiler                  ┌──────────────────────┐
                                         │cOmpile               │
///////////////                          │Compare               │
//                                       │Dos                   │
// Define the class "dot"                │Print                 │
//                                       │eXit                  │
///////////////                          │1                     │
→                                        │2                     │
class dot {                              │3                     │
→         fg_coord_t x, y;               │4                     │
→         int energy;                    │5                     │
→       public:                          │Compile the program in│
→         void move_to(fg_coord_t, f     │this buffer           │
→         };                             └──────────────────────┘
→
void dot::move_to( fg_coord_t newx, fg_coord_t newy)→   {
→       int i, j;
→
// First erase where it has been:
→
→       for ( i = x - 1; i <= x + 1; i++ )
```

Zortech's C++ compiler offers a full range of object-oriented programming tools.

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Vert. Frequency	50/60/70 Hz
Display Color	—
Scanning Method	NON-INTERLACE
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	PS/2
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Input Signal	TTL SYNC
	ANALOG VIDEO
Input Connector	15 PIN D TYPE

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Input Connector	15 PIN D TYPE

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	800x600
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Display Color	8/16/64 ALL COLOR
Scanning Method	INTERLACE
	NON-INTERLACE
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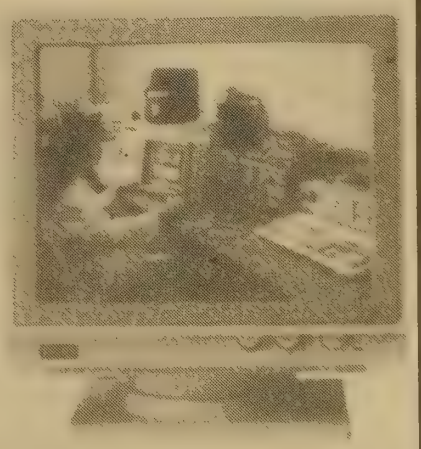
	EGA, PGA, VGA
Input Signal	TTL/ANALOG
Input Connector	9 PIN D TYPE
	15 PIN D TYPE



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C++ is fully polymorphic. It allows you to redefine not only functions, but also operators like "+" and even "()." You can, of course, make a terrible mess by redefining "+" as a form of subtraction, but C programmers are used to this sort of freedom.

Debugger)
Borland International
4585 Scotts Valley Drive
Scotts Valley, CA 95066

Quick Pascal 1.0 $99
Microsoft Corporation
16011 NE 36th Way
Box 97017
Redmond, WA 98073-9717

LISP

Common LISP is the language of choice in the artifical intelligence world. The version reviewed here is Allegro Common LISP, from Apple Computer. I spent some time talking with Apple LISP programmer Andrew Shalit about object-orientation in Apple's Allegro Common LISP.

LISP is not like other languages. It is so powerful and flexible that LISP programs often rewrite themselves. Data-types are redefined in mid-program. Much of what goes on in LISP involves keeping track of the environment in which you are working. The "scope" of a variable or function is the set of environments in which it is defined. Variables and bindings are defined in the block of code they occupy (lexical scoping) and in the part of the program which is running (dynamic scoping). Objects in Allegro Common LISP are another kind of environment, and provide another kind of scoping.

Objects which inherit from a parent object will inherit the definitions their parents had for variables and functions. Descendants share their parents' definitions because they exist in the environment of their parents, just as a citizen of California inherits federal rights through citizenship in the state of California. They also have special rights they get from the California constitution, which Arizona and Oregon citizens do not share. You can use objects as specialized environments in which different definitions can be true.

Apple's Common LISP has "multiple inheritance." If you have defined the class LAND-CREATURE with the function WALK and the class SEA-CREATURE with the function SWIM, then in this LISP (though not in Smalltalk or the Pascals) you can define a class AMPHIBIAN which inherits from both LAND-CREATURE and SEA-CREATURE. It can both WALK and SWIM. This means that you can define classes of objects as packages of abilities, and then mix those abilities in other objects.

Apple Allegro Common LISP also allows you to redefine objects after they have been created. The other languages discussed here could not do such a thing: an object has its "nature" derived from its class, and that is that. In this language things are more fluid. An object SALAMANDER might begin as a SEA-CREATURE, transform into an AMPHIBIAN, and end as a LAND-CREATURE. It could keep its identity the whole time. You can imagine the power that this conceptual scheme lends to simulations. It is part of the attraction LISP holds for artificial intelligence developers.

Apple Allegro Common LISP $495
APDA
Apple Computer, Inc.
20525 Mariani Avenue
Cupertino, CA 95014

C++

At last we arrive at C++, in the guise of Zortech's compiler. C++ was created (like C before it) at AT&T's Bell Laboratories. C++ was designed as a superset of the C language.

Data- and function-hiding can be as complete as you wish in C++. Data and functions inside of an object can be defined as private, protected or public. If they are private, they are not accessible at all outside of the object. If they are protected they are available only to descendants of the object. If they are public, they are available to all. You can also define "friend" classes and functions that have access to each others' private data and functions.

C++ lets you maintain full data security. C++ also defines class variables—variables the class keeps, rather than having them present in each of the members. An example: A class might use class variables to keep track of how many members it has or how many times each of its functions were invoked in its members. Smalltalk and LISP have this feature; the Pascals do not.

Inheritance in C++ is relatively straightforward as long as the "protected" data-class is implemented. If it is, then descendants can inherit their parents' data-types without further contrivance.

C++ is fully polymorphic. It allows you to redefine not only functions, but also operators like "+" and even "()." You can, of course, make a terrible mess by redefining "+" as a form of subtraction, but C programmers are used to this sort of freedom.

Because C++ has all the features of object-oriented programming and also includes the familiar and powerful C language, it is certainly the OOPS of the future. Apple has already settled on C++ as the system language for future Macintosh system programming. Microsoft is hard at work on a version of C++ for (reported) release in 1990. Borland is saying "no comment" in a promising tone of voice. This is the language to learn if you want a sure thing in the object-oriented world.

Zortech has presented us with a full implementation of C++ in version two of its compiler. They comply with the new C++ version two standard from AT&T. Their language is very fast. The graphics are excellent. It has a largely integrated environment, with a compiler that can be called from the editor.

It is also a true compiler. Many other C++ versions are "precompilers." They convert your C++ code into C, which they then compile or pass to another compiler. Zortech compiles directly from C++ to machine code.

In addition to the basic language, which includes graphics, there is a source-level debugger available for developers. There is also a family of classes being sold as "C++ tools." Royalty-free source code is provided for the objects with the tools.

Zortech has had earlier versions of C++ (based on earlier standards from AT&T). Those have served the C community well, but this is a major revision. Version two of the language brings multiple inheritance to the C world. Zortech has also improved its own implementation and interface. The editor and compiler are better integrated than in earlier versions. The few bugs I found are fixed in this version, and the error messages are much more useful. I predict that Zortech will gain a major share of the object-oriented C market from Microsoft and Borland, because Zortech is ready now with all the tools of object orientation while Borland and Microsoft are still circulating rumors. Zortech C++ version 2 is a good product.

Zortech C++, version 2 $199
C++ Tools $149.95
Debugger $149.95
Developer's Kit (all of the above) $450.00

Zortech, Inc.
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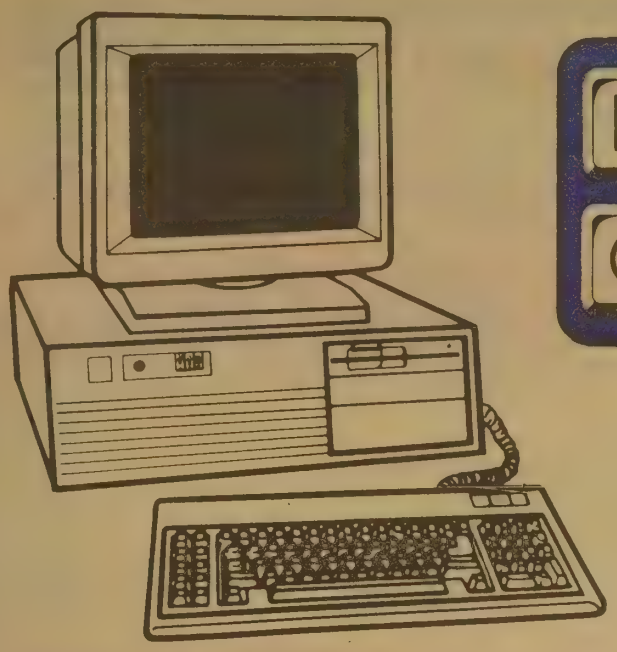

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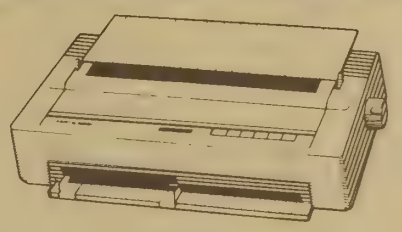

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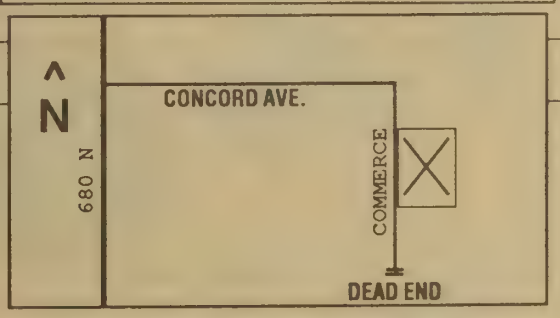

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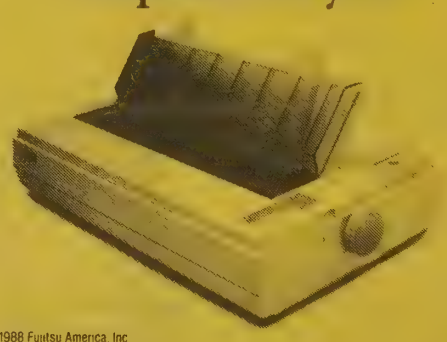

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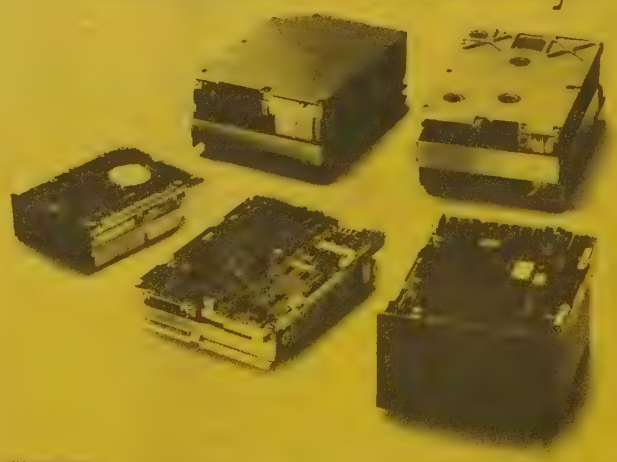

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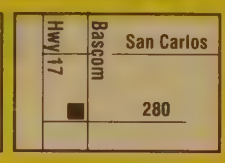

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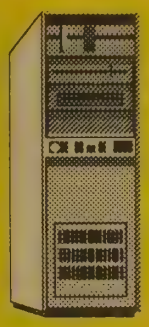

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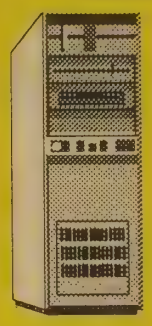

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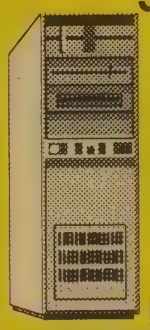

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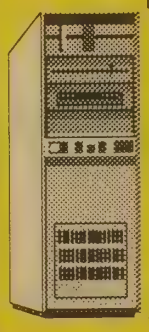

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VGA	2190	2550	2750	2850
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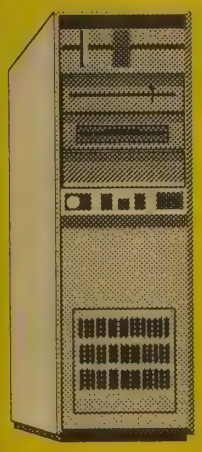

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US High-Tech In The Eastern Bloc

Blue Is Big In Red Square— Vendors Contemplate Problems, Opportunities

By Richard P. Greenfield

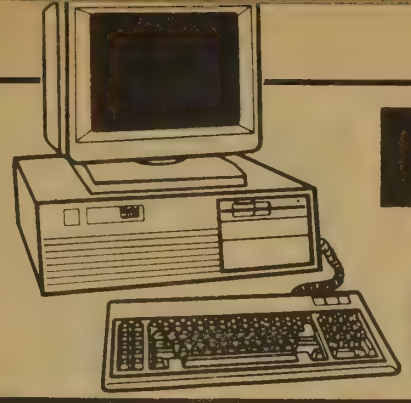
On January 23, the United States announced that it will officially propose to CoCom, the 15-nation alliance that regulates high technology transfer to the East Bloc, that restrictions on most high-tech products without obvious military applications be dropped. Although the Soviet Union was not listed in the first group of countries with which the restrictions would cease, the US Government has hinted for some time that it would allow faster computers to be sold to the USSR.

Several days earlier, the first US-Soviet Personal Computer Seminar was held at San Francisco State University. Sponsored by the US-Soviet Business Institute at the School of Business, the conference brought American developers and members of the business community together with some of their Soviet counterparts. Among the featured speakers were Alexei Pazhitnov, author of the game Tetris, and Dr. Leonoid Evenko, chief of the Department of Management Studies, USA-Canada Institute of the Soviet Academy of Sciences.

Predominant issues were the Soviet hardware and software market, potential areas for American joint participation, the state of intellectual property protection in the USSR (the Soviet Union is not yet a signatory to the ICC/Berne Convention) and the problems of making deals in a non-convertible currency or arranging barter deals (purchases of Soviet real estate were one solution suggested).

Peter Alexander, a partner in GLAV-PC, a consulting firm to US-Soviet joint ventures, estimated the number of PCs in the Soviet Union to be between 70 thousand and 300 thousand, with several hundred Macs as well. Since the Soviet population is more than 280 million, even high estimates of the installed user base show the large market potential.

The large ratio of PCs to Macs was explained by three factors. A decades-old relationship with IBM goes back to a time when its mainframes



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- One year parts & labor warranty

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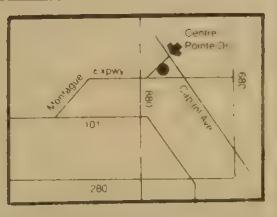

were being set up in the Soviet Union. Then later, in an era of very tight technology transfer restrictions, clones were still available from sources in the Far East. And clones that will run a full range of software are available far more cheaply than Mac equivalents.

Apple Bearish

According to Evenko, studies in the Soviet Union project IBM as the leader in hardware and in selection of software packages to run. Moreover, he says, "I do not think that Apple has made a very strong effort to have a presence in the Soviet Union. It may be that they will in the future and that they can overcome the preference for IBM products right now. My own idea of a perfect office would be to have a couple of IBMs and a couple of Macs for graphics and desktop publishing use."

According to Lee Felsenstein, another partner in GLAV-PC who has been consulting with a number of Soviet organizations and cooperatives, "They [the Soviets] have made the decision that IBM architecture will be the standard for business and industrial use."

Sources at Apple confirmed that at this time there is no one in their European Division focusing on Eastern Europe or the Soviet Union. Spokeswoman Stacy Byrnes says, "We have no set plans for a special marketing push in that direction. We see it as a potential market, but there are several barriers besides the ones that were just lifted [the CoCom restrictions]. There is no set distribution network, and the non-convertible currency is a problem. In addition, our high-end products may still be regulated."

Lee Felsenstein: "The Soviets have made the decision that IBM architecture will be the standard for business and industrial use."

Others Bullish

Although Apple may be unenthusiastic about the market potential of Eastern Bloc countries, other companies and developers are clearly ready to do business.

Atari US, which has a companion corporation in Atari West Germany, is clearly positioned to do business in East Germany at least, and the company has sold some computers to limited end-users in the Soviet Union. Company spokesperson Max Bambridge says, "We believe that the availability of computing power is not to our disadvantage in national security matters. We would like to be able to sell and compete head-on with our competitors, the various clone makers who are already there and who have not been subject to the CoCom restrictions. We would like to sell our entire product line."

A Different Market

Citing the practical difficulties inherent in Eastern European dealings—non-convertible currency, lack of technical infrastructure and distribution—Bambridge adds, "We have to set ourselves up to deal with a society, or societies, that are much

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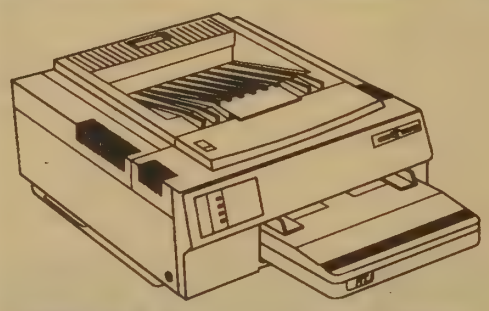

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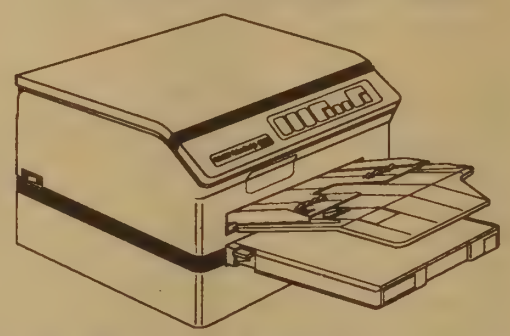

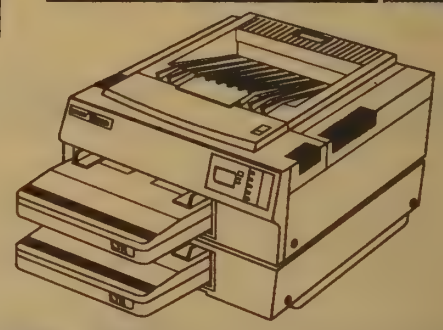

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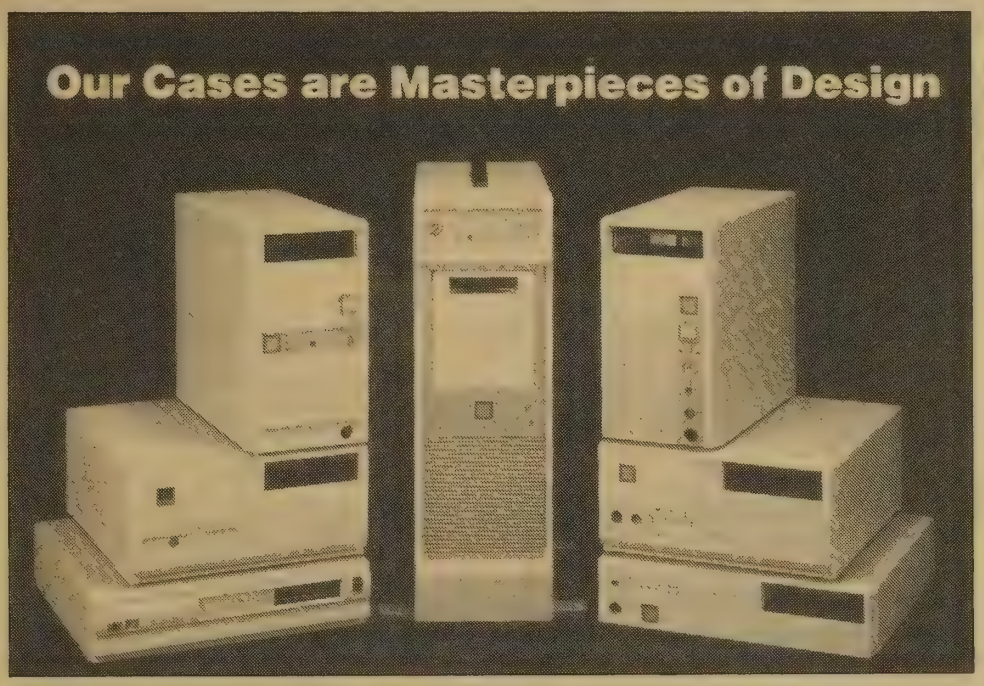

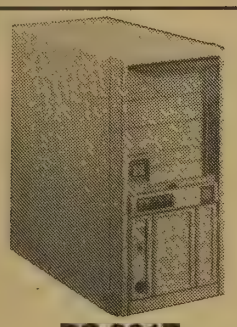

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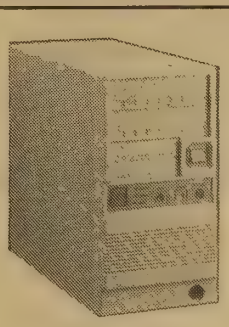
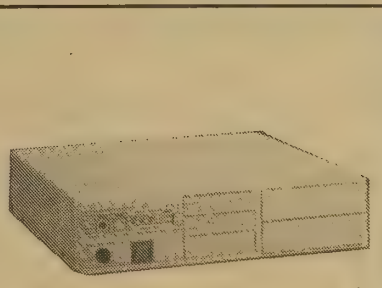
- For three 5¼″ FDD, two 3½″ FDD & one 3½″ HDD
- 4 LED indicators and Turbo switch
- Patent Reset switch to prevent data loss
- With MHz display range to 99 MHz
- 1.44 mm metal sheet
- Dimensions: 7⅞″x16″x15¾″
- 1 pc/carton/4.5 cu ft
- N.W.: 10 kgs, G.W.: 12 kgs



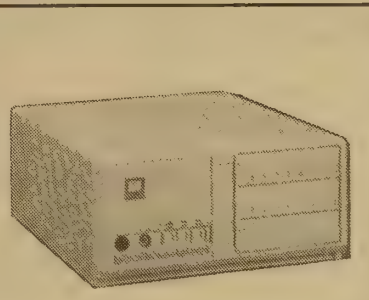
PC-601T

- Mini-tower case for Baby AT or XT compatible
- For two 3½″ FDD, two 5¼″ FDD & one 3½″ HDD
- 3 LED indicators, Turbo & Reset switch, keylock
- Patent Reset switch to prevent data loss
- 1.2 mm metal sheet
- Dimensions: 7″x16″x13¼″
- 1 pc/carton/1.56 cu ft
- N.W.: 7 kgs, G.W.: 8 kgs



PC-303

- Slim case for Baby AT, XT or PS/2 compatible
- For two 3½″ FDD (or 3½″ FDD & HDD for each) & two 5¼″ FDD
- 3 LED indicators and Turbo switch
- Patent Reset switch to prevent data loss
- 1.44 mm metal sheet
- Dimensions: 16⅜″x15⅝″x4″
- N.W.: 6 kgs, G.W.: 7 kgs



PC-103

- Slide-in case for Baby AT, Big AT or XT compatible
- For three 5¼″ FDD & one 3½″ FDD
- 3 LED indicators, Turbo & Reset switch, keylock
- 1.2 mm metal sheet
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younger than ours is in computer terms."

Felsenstein agrees. "My perception is that they need to import technology about a generation behind what we have, which will give them time to catch up in hardware and to develop software and distribution channels for it." Felsenstein calls his approach "intermediate-tech—setting the clock around 1981 for the whole society, and then bringing it forward. The Soviets have to learn to do business at the very same time as they equip for it."

George Por is trying to import the program Caucus to Hungary in IBM-DOS versions for the XT, AT, 386 and mainframes. This will allow different users in Hungary to connect on a network, much as The WELL (which is experimenting with a version of Caucus) does.

Por points out that Hungary now has more than one thousand joint ventures with Western companies. "The problem is that the bigger companies can wait it out—stay in the country for a long enough time to make a profit. This is much harder to do for a small business or developer."

Because the changes occurring in Eastern Europe and the Soviet Union have come at a time and a rate that no one could have predicted, none of the usual market and business platitudes are appropriate or even accurate. It is clear that these nations have to retool much of their basic economic infrastructure. How that is done, with whose help, whether American companies and the United States Government will profit economically and politically—all these questions will be resolved as much by US policy decisions as by plans formulated in the East. ■

Atari's Max Bambridge: "We believe that the availability of computing power is not to our disadvantage in national security matters. We would like to be able to sell and compete head-on with our competitors, the various clone makers who are already there and who have not been subject to the CoCom restrictions. We would like to sell our entire product line."

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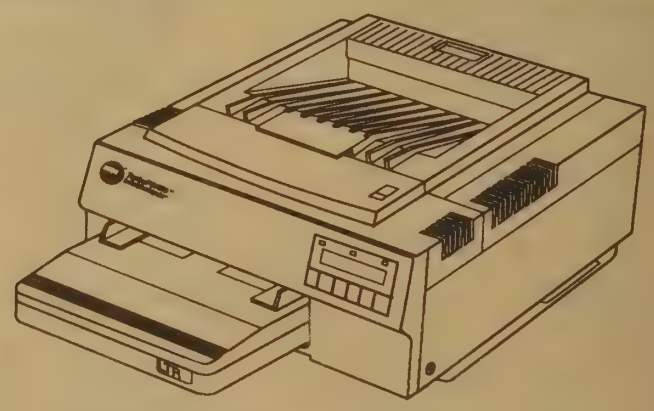

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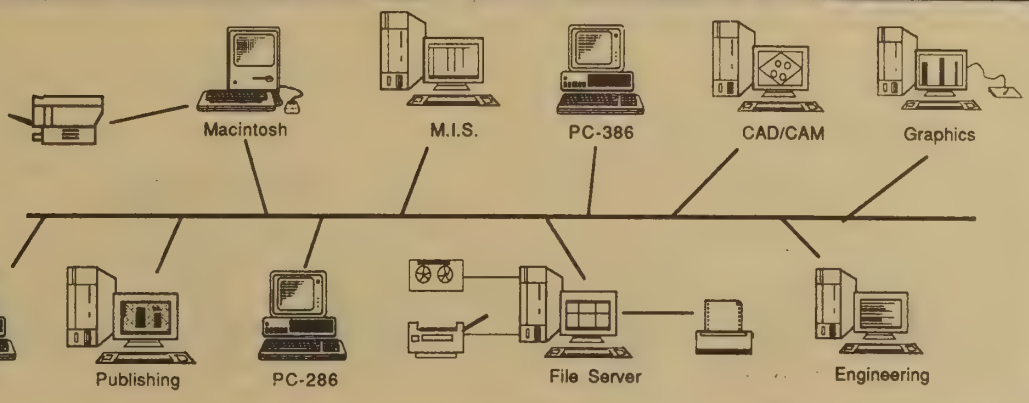

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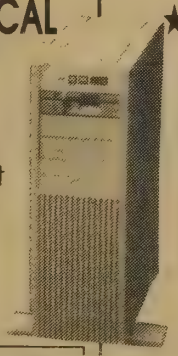

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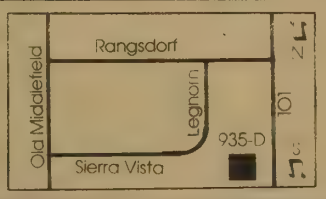

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BY BENNETT FALK

UNIX Is Not XENIX

A Look At SCO's First "UNIX"

The original UNIX was supposed to be a generally useful, portable, multiuser, multitasking operating system: a piece of software, nothing more and certainly nothing less.

But things turned out differently. UNIX is not just software, and indeed, more often than not UNIX is not "just UNIX," but something that comes with its own unique history and personality.

The Name Game

Inadvertently, AT&T, whose product UNIX is, helped to create this situation by simply reserving the trademark "UNIX" for itself while licensing the software to other companies who then (with varying degrees of cleverness) thought up names for their UNIX products. Soon the world was full of things like Venix, XENIX, Ultrix, Dynix, A/UX, and AIX. Other products that were "UNIX-like" without being licensed by AT&T cashed in on this peculiar nomenclature with UNIX-like names ("minix") or with recursive acronyms like GNU (GNU is Not UNIX) and XINU (XINU Is Not UNIX).

After more than a decade of this silliness, AT&T finally agreed to let its licensees use the name "UNIX" for their products. One of the first of these new "UNIXes" to reach the market is UNIX System V/386 from the Santa Cruz Operation, and no one was quite sure what to expect.

SCO is hardly a newcomer to UNIX software. The company built a very fine reputation developing and marketing XENIX (a UNIX implementation originated by Microsoft) for PC compatible hardware. SCO UNIX could hardly be either a carbon copy of AT&T's UNIX for 386 hardware or a renamed version of XENIX, but what other options are there?

A Short History

There are three different kinds of UNIX at large in the world, all sprung from a common ancestor, AT&T's Version 6. Version 6 was not licensed for commercial distribution, but it did become the foundation for the development work at Berkeley and it was the predecessor of Version 7, which was the first commercially viable UNIX release.

From Version 7, AT&T went on to develop UNIX System III and UNIX System (now System V, Release 4). Along the way, AT&T also became a manufacturer of computer hardware, and this hardware became the platform on which UNIX development was done.

Starting from Version 6, the University of California at Berkeley became a center for UNIX development and produced the version of UNIX known as the Berkeley Software Distribution (now BSD 4.3). Berkeley releases are numbered 4-point-something, with 4.2 and 4.3 going on to enjoy commercial success chiefly on DEC VAX and Motorola-based hardware.

Microsoft and the Santa Cruz Operation have jointly developed XENIX (most recently XENIX 2.3) for smaller microcomputers. The original XENIX was based on Version 7, and after a brief flirtation with the Lisa (Apple's predecessor to the Macintosh), XENIX became an implementation of UNIX for microcomputers based on Intel processors. Subsequent versions of XENIX incorporated some of the features of AT&T's UNIX products.

AT&T's UNIX has a reputation for being, well, awkward. The default shell for System V is the Bourne shell which offers very few opportunities for the user to cut down on the number of keystrokes needed to enter commands. Some of System V's utilities are downright rude: the 'ls' command lists file names in a single column format that is difficult to read and very likely to scroll off the screen. Some of the system's features (such as 'ulimit' which

SCO UNIX is an authentic System V, with many niceties for the Intel environment built in. Microsoft and SCO have collaborated to make the SCO UNIX development system particularly rich in features.

TABLE 1: DISK I/O TESTS

sco xenix	sco unix
Executing dwrite	
0.33	0.9
0	0
0.25	0.32
Executing dread	
0.65	1.06
0	0
0.23	0.33
Executing pipes	
1.23	1.97
0	0
0.53	0.77

TABLE 2: CPU ACTIVITY

sco xenix	sco unix
Executing sieve (100 iterations 1899 primes.)	
9.05	9.28
8.9	9.1
0.04	0.06
Executing loop	
1.8	2.24
1.7	1.7
0.03	0.08
System call	
2.45	4.04
0.25	0.39
2.13	3.32
Function call	
0.34	0.59
0.2	0.2
0	0.06
Assignment	
0.13	0.39
0	0
0.01	0.03
Function call overhead	
0.21	0.20

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Routine system administration chores under SCO UNIX are eased by the "sysadmsh" utility that provides a screen-oriented, menu-driven interface to most of the administrator's functions. SCO UNIX has come a long way from the old style of UNIX administration.

enables the system administrator to set maximum file size) are more annoying than they are beneficial. Above all, System V just seems slow.

Berkeley UNIX is often regarded as more flamboyant, more user-friendly, and more esoteric than other versions of UNIX. Many of the features essential to workstation operation were first developed in Berkeley UNIX: virtual memory (the ability to run processes larger than physical memory), network connections, full screen editing, job control, and a more convenient shell. Of course, these features require more sophisticated (and more expensive) hardware.

XENIX was created for relatively small, relatively inexpensive computers. Because it runs very efficiently and is easy to use and to administer, XENIX enjoys tremendous popularity among small businesses and hobbyists, but the popularity of XENIX with that audience has probably kept it from being taken seriously by others.

The New UNIX

Comparing SCO UNIX with the other varieties of UNIX is a tricky business. It is not as leaden as AT&T's System V; it does not have either the extravagance of Berkeley UNIX or the compact efficiency of XENIX.

It is certainly bigger and slower than the current release of XENIX. The system kernel of SCO UNIX is just over 500 K in size. A fully configured XENIX kernel is typically around 300 K. The kernel on a Sun 3/80 workstation (running Berkeley UNIX) will be about 700 K.

Like XENIX, SCO UNIX can run in as little as 2 Mb of RAM, but more memory is recommended. A complete installation of the basic SCO UNIX operating system and all the development tools could easily take 60 Mb of disk space, compared with 40 Mb for the comparable XENIX system and 60 to 80 Mb for the comparable Sun operating system installation.

SCO UNIX is an authentic System V, with many niceties for the Intel environment built in. Microsoft and SCO have collaborated to make the SCO UNIX development system particularly rich in fea-

TABLE 3: MULTI-USER TESTS

	sco xenix	sco unix
Shell 1		
	2.47	4.21
	0.08	0.11
	0.6	0.91
Shell 2		
	2.18	4.56
	0.18	0.25
	1.2	1.48
Shell 3		
	3.45	10.07
	0.18	0.39
	1.86	2.2
Shell 4		
	3.86	12.75
	0.31	0.49
	2.32	2.93
Shell 5		
	4.77	19.88
	0.38	0.64
	2.91	3.77
Shell 6		
	5.71	23.75
	0.48	0.84
	3.53	4.46

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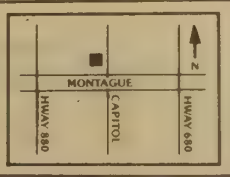

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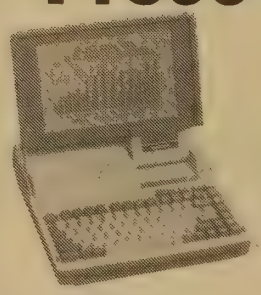

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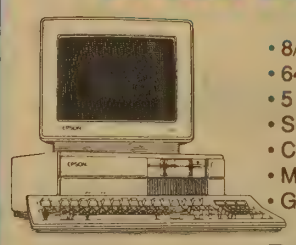

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tures. Both the Microsoft and AT&T C compilers are provided. Microsoft's Code View debugger and MASM Macro Assembler are part of the development system, as are libraries for cross-development of software for XENIX, DOS and OS/2.

The most striking new feature of SCO UNIX is the ability to run UNIX as a "trusted" system in accordance with guidelines published by the Department of Defense. SCO UNIX has facilities to run at a C2 security level. Computer system security is a good thing to think about, and the SCO documentation on maintaining security is very good. Ideologically, however, it is no easy thing to reconcile the concept of a trusted system (and the limitations on user activity that that implies) with the openness, willingness to explore, and commitment to self-regulation that have traditionally characterized the UNIX user community.

Routine system administration chores under SCO UNIX are eased by the "sysadmsh" utility that provides a screen-oriented, menu-driven interface to most of the administrator's functions. SCO UNIX has come a long way from the old style of UNIX administration. The documentation contains dire warnings that under no circumstances should the password file be edited manually.

There are other new wrinkles to SCO UNIX as well. Mail under SCO UNIX is handled by the Multi-channel Memorandum Distribution Facility (MMDF), which is relatively simple to use, but takes some care to configure. (MMDF configuration is not yet part of the sysadmsh menu system.)

The installation procedure for SCO UNIX is very similar to that used for XENIX, and worked flawlessly the first time.

The increased size and complexity of SCO UNIX does not bode well for its performance. Tables 1-4 show the results of running a modified version of the UNIX benchmarks first published by David Hinnant in *Byte* in 1983 under both XENIX and UNIX. The same hardware was used for both tests: a 16 MHz Wyse 386 PC with 2 Mb of RAM, an 80287 math co-processor, and a 60 Mb hard disk. This is essentially a minimum configuration for SCO UNIX.

On a purely computational test, like the sieve prime number generator, the two operating systems perform about equally well. In virtually every other category of test the XENIX system outperformed SCO UNIX. UNIX's performance on the multiuser tests was particularly disappointing.

SCO UNIX is a new venture for the Santa Cruz Operation. This System V product is the foundation for a number of other software offerings from SCO, most notably the Open Desktop workstation software. SCO UNIX is rich in features but not particularly impressive in performance.

The larger issue of the personality of SCO UNIX is not entirely resolved, but the combination of an attractive development package and security features promises that SCO UNIX will find an identity all its own. ■

TABLE 4: COMPILER TESTS

sco xenix	sco unix	sco xenix	sco unix
Compiling dwrite.c		**Compiling loop.c**	
4.76	14.55	2.83	11.73
1.11	1.25	0.65	0.61
1.39	2.34	1.07	2.02
Compiling dread.c		**Compiling pipes.c**	
3.4	12.64	3.1	11.74
1.11	1.28	0.94	0.97
1.12	2.17	1.08	2.14
Compiling fcalle.c		**Compiling scall.c**	
2.81	11.4	2.73	10.97
0.7	0.57	0.62	0.48
0.99	1.94	1.02	1.92
Compiling fcalla.c		**Compiling sieve.c**	
2.62	10.86	3.01	11.53
0.57	0.45	1.07	1.05
1.03	1.93	1.04	2.09

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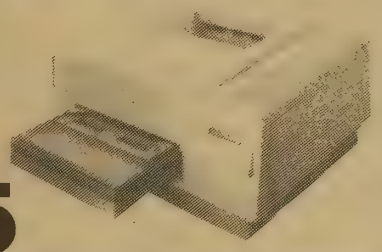

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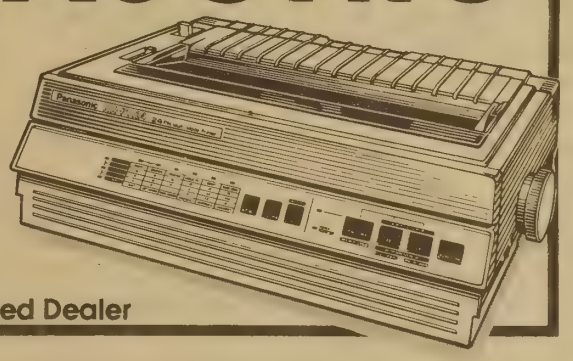

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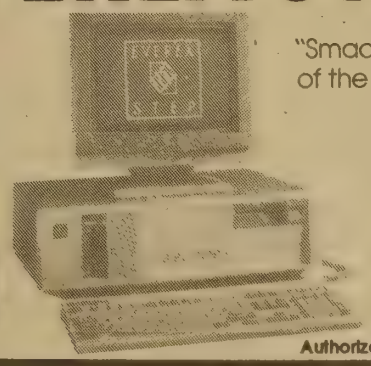

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BY DAVID MORGENSTERN

Kudos And Menudos—1989

Now that the past year has thoroughly cooled off and dried hard on the bottom of the pan, we can take a clear-headed look at what was what in 1989. We hope we may learn a lesson from the goings-on and do better—but most of us would rather play with our computer toys! Angst? Schmangst! Fire up the hard disk. Here's a few of the best and the worst:

• **Best Announcement of an Un-Product.** Kristi Coale, "Annotator: the Electronic Copy Editor," July *MacUser* magazine.

Annotator, from Farallon Computing, got a full half page in the New On The Menu section of this monthly rag. The program was supposed to let users add written and vocal (using the MacRecorder sound digitizer) comments to their documents. When used with the Timbuktu networking software, it would allow many users to criticize any type of Macintosh document simultaneously. A pretty hot potato, but it has yet to see the light of a monitor. A no tater!

The story floating around the ether is that the programmer responsible for writing this masterpiece, a BMUG old-timer, got tired of the thing and received his walking papers. Farallon will not talk about Annotator, calling it a "de-announced" program. Developmental software revisionism in action.

Developers try to schedule advertising, announcements, and reviews with the actual release of a product. Last-minute testing and bug fixes often disrupt the careful plans of the marketing department.

Most computer monthlies are still trying to avoid evaluating software still in development, so-called betaware. Reviewers got their fingers burned several years ago when Microsoft brought out an undercooked Word 3.0. The magazines swore off prerelease goodies, after heaping pages of praise on a buggy mess that left them with egg on their faces.

Kristi Coale, a fine writer, got caught in an end-of-the-year purge that saw most of the *MacUser* staff hitting the streets. Don't take no wooden press releases!

• **Best Use of the Word *Solution*.** Peter Blakeney, IBM Advanced Education Systems Group.

There really should be an industry-wide moratorium on the word "solution." It has lost all connection with the real world. Where once it meant *solving or fixing a problem,* it now means *giving a salesman lots of money.* IBM's slogan this year is "the solution is IBM." It is featured in an obnoxious radio advertisement with the jingle, "How're you gonna do it? PS/2 it! The solution is ..." Convincing arguments to lay out the cash.

IBM is hoping that users will somehow overlook the Mac when heading into multimedia fleamarket. Perhaps it was the desert air at COMDEX, or swallowing too much marketing hype along with the hors d'oeuvres, that led Peter to expound, "Our interest in multimedia is providing solutions, not producing something that merely looks slick." Am I the only one that is having trouble buying the image of IBM and sincere Judy Garland put-it-on-in-the-barn multimedia shows?

Solution—remove the word from your online dictionary.

• **Best Soft Wear at a BMUG Meeting.** SewSoft by Andros Software, Moss Beach, CA.

SewSoft is an interesting program that helps users create custom fitting patterns for sewing. After demonstrating the software, David Hall of Andros gave a bonus presentation. He put on a skirt.

There followed a lecture on the psychosocial aspects of clothing; the primary thesis of the talk being that men should be able to wear skirts too. David felt that computers will play a role in helping men cross-dress by providing a better cut and fit than those found off the racks in department stores. He also provided information on a local transvestite support group.

The BMUG meeting crowd handled this pretty well; they've learned to expect the unexpected from marketing representatives. David's blend of electrical engineering, artificial intelligence, deep-tissue body manipulation (he studied with Ida Rolf), and Yoga is not too out-of-the-ordinary in the Bay Area.

• **Best MacPractical Joke.** Tom Santos, San Francisco.

Last summer someone (or ones) called the nuPrometheus League stole lots of old Macintosh computer source code. They also threatened to distribute the complete commented code (the road map to the freeway system) to the Mac ROMs, the Hierarchical Filing System, and System software.

Just as in a spy story, interested parties were requested to place an ad in certain computer rags

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HOT TIP

The Mac has its own mind about the order of files, not always in the order we'd prefer. Perhaps you'd like to have a list of your files in alphabetical order, but with a couple of special favorites at the top where you'll see them first.

The way to get around your Mac's ABC predilections is to stick a **space** or two in front of a name. This will bring to the top of a menu. Two spaces come before a solitary nothing to your Mac. Sometimes an ordinary space won't do the trick (in the Finder for example), so you will have to use an **Option+Space** combination. There are some other applications of the space trick. The personalizing boxes that we're asked to fill-in with name and company won't accept plain spaces as a response. Use the Option model if you want to leave the name blank.

The telecommunications program, Microphone II, Version 3.0, has a switchable icon bar, or a button bar that carries out assigned scripts. The order of buttons in the bar is usually alphabetical, but can be programmed in a script—not horribly difficult, but it takes a long and hard look into the six pounds of manuals that accompany the software. A quick and dirty reordering is accomplished by placing spaces in front of certain names to control their order.

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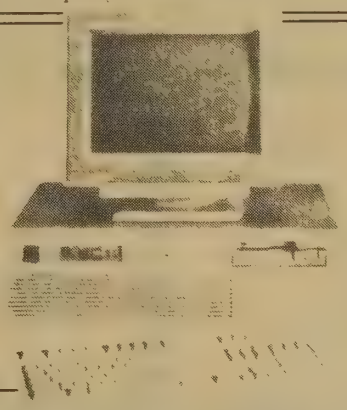

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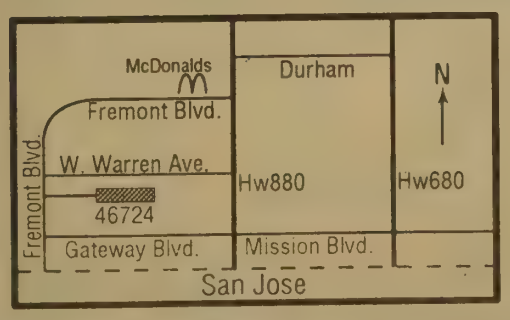

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and local San Francisco Bay Area papers, including the word "Prometheus." The software would be sent to the interested party. This was too tempting for Tom, a BMUGer of long standing.

He placed a classified ad in the computer section telling of "New Prometheus modems for sale!" Interested parties were to send inquiries to an address in Redmond, Washington—not Tom's summer home, but the corporate offices of Microsoft. That the thief had mentioned the Apple/Microsoft lawsuit as one of the primary motivations for the code caper was delicious ironic icing.

Six months later, the FBI finally got around to investigating the crime and came knocking on Tom's door. The agents knew little about the computer industry and hadn't bothered to check out the address. They thought they had someone on whom to pin a receiving stolen code charge. No one likes to have a joke explained to them! Grrrrr.

Tom's fantastic new San Francisco Mac store (a techno-palace), Macadam, also qualifies as the Best Getting Around Mac-named Licensing. Apple Computer and McDonald's lawyers are kept busy overseeing the Mac-ified world. A local sushi bar had to change its name from MacSushi to We Be Sushi, after trouble with the name police!

Anything having to do with computers with the "Mac" prefix knows it's licensing time, if you want a particular name. Names are worth good money nowadays—a BMUGer just sold the rights to his small-time hardware product's name for thousands of MacBucks!

The catch to the Mac-conundrum is to find a word that is a genuine word. Macadam is a road made of broken stones, or pavement, and named after the Scottish inventor, J. L. McAdam (1756–1836). If you stub a toe on a piece of macadam do you hurt your golden arches?

• **MacHumanitarian of the Year Award.** John Norstad, author of Disinfectant.

One of the bright lights in the dark mess of Mac viruses has been Disinfectant. It has proved to be an effective anti-viral agent at a price that all users can afford—it's free!

John, working at Northwestern University's Academic Computing department, coordinated the suggestions and coding of Macintosh programmers around the world. He describes the effort as "cooperative software development over Internet." The result of months of work and hundreds of notes passed around the globe is a very elegant, safe, and informational program. It has been quickly updated for each new virus and an upcoming version will incorporate clone checking. *Available on BMUG Utilities 8 disk.*

• **Best User Quote Heard on the BMUG HelpLine.** "I don't think I'm infected."

Viruses have been on our disks too long to be fooling around—either you know you're infected, or you know you're not.

• **Best Unwarranted Attack on a Defenseless Software Giant.** Steven Levy, "Ashton-Tate Stumbles," December, *Macworld* magazine.

The point of Levy's column is that Ashton-Tate is a hopelessly blue-blooded company that doesn't have a clue on Macintosh culture and marketing. Their attempts to hawk the Mac programs they've developed and acquired have been fiascoes. "Innovative and underrated" programs like FullWrite and Full Impact should have been solid hits, but were sabotaged by AT's lack of not-so-blue marketing know-how. The bums!

I'm really the last person to defend lumbering battleship software companies, but much of the bashing is unfair. Ashton-Tate thought they could buy their way into the Mac trailerpark and blow away Microsoft's hold on the spreadsheet and power word processor market. This was a true blue-colored glasses delusion—a Mac wish-fulfillment fantasy.

The only way to lure users away from their current brand of software to another is to offer an irresistible blend of low price, vastly increased performance, and support. It's an even harder task when users have spent lots of time and money on learning their programs.

When released, FullWrite was unbearably slow on anything but a Mac II. It needed at least two megabytes of memory to operate efficiently, when RAM prices were testing the stratosphere. The program gained a cult following after flaunting its proposed features in prototype version demonstrations at Macworld expositions. A lovely interface is a worthy goal for any program, but it won't drag an expensive flawed program with bugs across the finish line. It's now being offered free with a purchase of four megabytes of SIMMs from Technology Works in Texas.

Full Impact has also had trouble convincing business users that they should drop Excel. All of the fancy spreadsheets are tough going for many productivity-minded users. The readily available Excel templates for home and small business use form another hurdle that has balked the quick growth of excellent competition.

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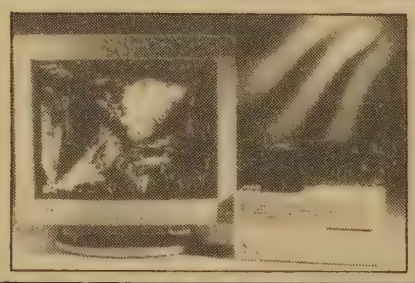

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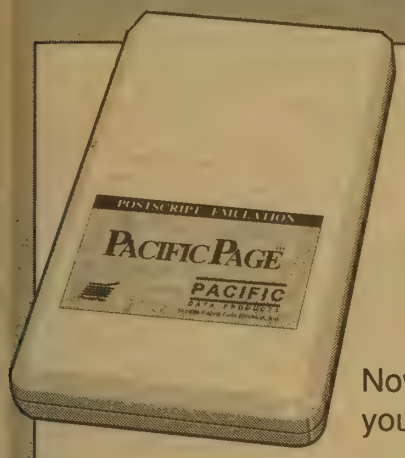

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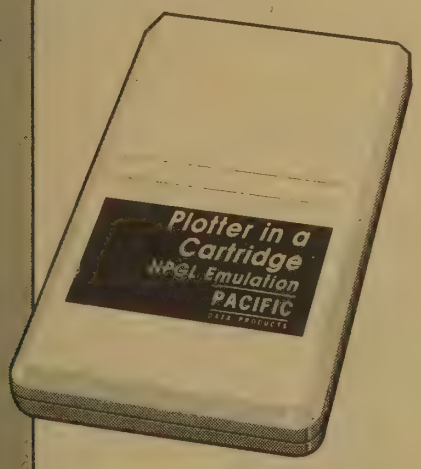

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Levy's column really seems like a plug for two Macintosh good ol' boys, Randy Wigginton and Scott Wiener. Their work is described as "state-of-the-art Macintosh products, created by people whose blood, when observed under a microscope, flowed in icons." Don't bother with résumés, boys—you've got a magazine article! But get a blood test, please.

• **Best Shareware Product.** Boomerang 2.0 by Hiro Yamamoto, zetasoft, Berkeley.

This CDEV (Control Panel Document) is the best addition to the Macintosh operating system since Suitcase and Font/DA Juggler. Apple should buy it and incorporate it into the Finder. It's that good!

The Mac's Hierarchical Filing System (HFS) makes it easy to place folders within folders. Folders are necessary to your Mac, since they speed up performance and don't overtax the Finder with having to look at everything on a disk at one gulp. They're even more beneficial to users, enabling us to organize our work and identify files. But using deeply buried folders can be an awful pain in the mouse finger, especially if you're saving bits and pieces into different corners of your hard disk.

Boomerang puts a little button on your Standard File dialog box (the one you see when you open or save documents) that is the miracle worker. Clicking it brings up a popup menu that lists the latest folders and files you've visited. Some folders and documents are used more than others and they can be made "permanent" additions to the menu.

Desk accessories and MultiFinder are not available when you're in a dialog box, which is exactly the time when you wish you had some of them. Boomerang has the ability to create a new folder and find a shy file that's hiding someplace.

The author is even providing customer support, if you want to pay for a phone call—unheard-of in a shareware product. He's always answering questions online on most of the international networks. The shareware price is only $30, which is a bargain. Support your shareware authors and send your payments! Available on BMUG Utilities 13 disk.

• **Best Example of MacAltruism.** SafeEject, CJS Systems, Berkeley.

Last spring, John Sawyer and Chuck Mayer decided they had seen too many broken 800 K disk drives, a very unusual sentiment from a computer repair shop. They noticed that the drive head was being snagged by the disk's metal shutter as the disk came out of the Mac. A whole new drive would be

What Is BMUG?

BMUG is a nonprofit educational corporation dedicated to collecting, evaluating and disseminating information about computers using a graphical interface. For a while that meant the Apple Macintosh but now includes other makes, models and operating systems, including the NeXT best thing.

Like any growing organization, it is many different things to its 8,500+ international membership. BMUG supports many Special Interest Groups (SIGs), an eight-line Bulletin Board System (BBS), free HelpLine, software library, weekly meetings, and much more. BMUG also puts out a semi-annual 400+ page book that we call our "newsletter."

Our motto continues to be: *We're in the business of giving away information.*

Come and join in the dialogue at the BMUG main meeting every Thursday evening, 6:00 to 9:00 (or whenever we finish), in the Physical Sciences Lecture Hall on the U. C. campus. BMUG West is a meeting held monthly in the Exploratorium, San Francisco's science museum.

The BMUG HelpLine, (415)849-HELP, and our fax number, (415)849-9026, provide technical assistance and telephonic hand-holding during business hours (11:00 a.m. - 5:30 p.m.). If your question can't be answered on the spot, we try get you in touch with someone that can help. Of course, not every problem can have a happy ending—but we try.

BMUG has one of the most up-to-date, comprehensive software libraries around with 400+ double-sided disks filled with the latest versions of public domain or shareware programs and HyperCard stacks. New disks are unveiled almost every week at the Thursday general meeting. BMUG also brings you the PD ROM™ 2.0, our entire library and more on CD-ROM—according to Apple, it's the best selling CD-ROM!

Our BBS offers many of the latest versions of files in our software library, as well as news, private mail, rumors, etc. The BMUG BBS is part of the worldwide EchoMac Network on FIDOnet (161/444); by calling a local FIDOnet BBS in your area, you would then be able to get in touch with us wherever you are as well as send mail to users everywhere!

BMUG is now a part of the international USENET network (apple!bmug!user.name@sun.com) or (user.name@BMUG.FIDONET.ORG). With our multi-line capability you are now be able to have access to BMUG almost 24 hours a day. It's easy to use, fun, and a great resource.

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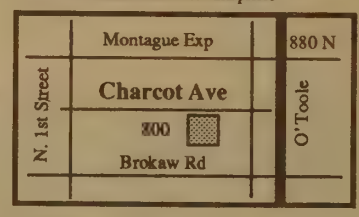

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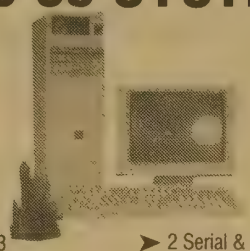

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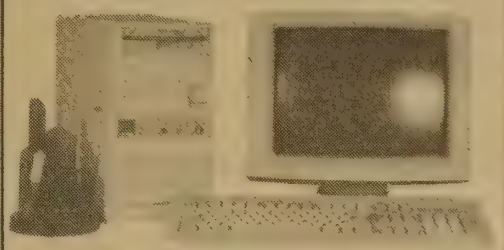

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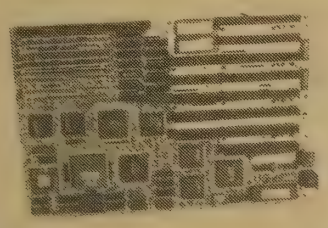

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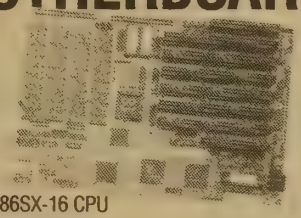

- Intel 80386SX-16 CPU
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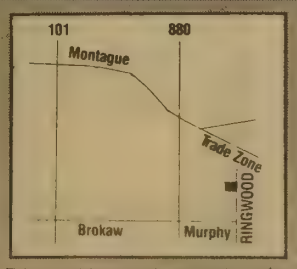

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needed, since the torn head was not repairable. The answer was to move the head to a safe position before the disk was ejected.

The two hard-heads got Jay Riley of Datamagik to write a little INIT program to move the head out of the shutter's way. They called it SafeEject. Available on BMUG Utilities 15 disk.

Now Apple has provided their own fix, the Apple 800 Eject INIT. The same code is built into the System 6.04 software and is not needed by the new higher capacity floppy drives. Apple has reportedly known about this design problem for years, but never said a word. Perhaps it took that long for them to come up with such an original name for the software?

Bits And Bytes

• Big BMUG News! The BMUG office is moving to a bigger and better location, 2055 Center Street, just a half block from the Berkeley BART station, in an old furniture rental office. This is a call to all local Bay Area members to give a helping hand to your user group. We need donations of building supplies (or building bucks), construction help, office furniture, and metal folding chairs. We're hoping to create a space that will support our many Special Interest Group meetings, HelpLine volunteers, and busy office staff. If you call help, please give a call to the BMUG office. Thanks!

• It's time to start making plans for the San Francisco Macworld Expo. This Mac Show of Shows will be held on April 11-13 at three halls, Moscone Center, Brooks Hall and the Civic Auditorium. BMUG will have our usual buffet table of goodies and helpful advice. You can meet the faces behind the voices on the HelpLine!

We'll be doing something special at this Expo—running User Group Rooms at two of the halls. The rooms will be a place for user group members from around the world to connect, hang out, leave messages and hold meetings. BMUG volunteers will help out-of-town user group members with choice information on where to go and what to see.

• Be sure to check out Harry Goodman's weekly computer radio show, *Your Expanding InfoSphere,* on KALW-FM 91.7 on Saturdays, noon to 1. BMUGers regularly appear on the show! ■

Upcoming Events:

March 15	Scott Kim's Letterforms & Illusion, Symantec.
March 22	Peter Norton (Mac Utilities), Adobe PhotoShop.
March 28	BMUG West meeting at the Exploratorium in San Francisco.
March 29	Salient Partner, SuperMac PixelPaint Professional.
April 5	Reference Software Grammatik Mac, Hewlett-Packard ColorPrint.
April 11-13	Macworld Expo. Be there, or be square.
April 19	Chris Crawford, Balance of the Planet, SuperMac Hardware.
April 26	*Money* Magazine WealthBuilder, Ashton-Tate Full Impact.

It's time to start making plans for the San Francisco Macworld Expo. This Mac Show of Shows will be held on April 11-13 at three halls, Moscone Center, Brooks Hall and the Civic Auditorium. BMUG will have our usual buffet table of goodies and helpful advice. You can meet the faces behind the voices on the HelpLine!

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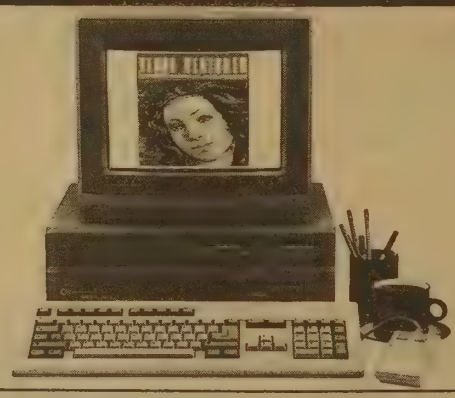

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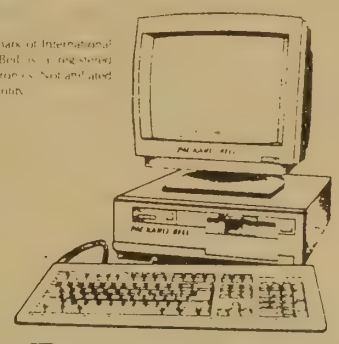

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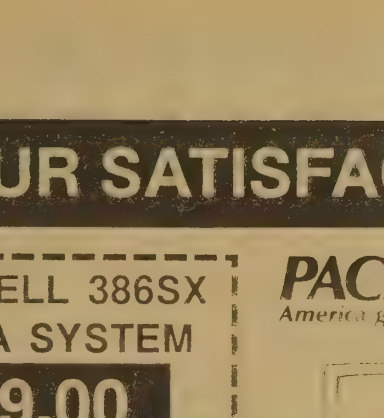

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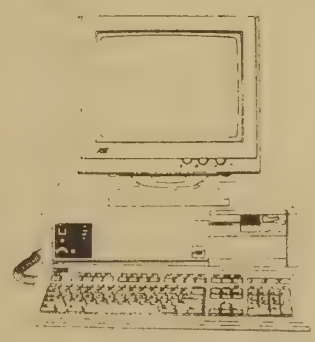

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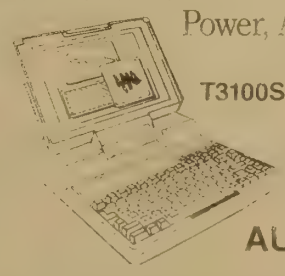

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BY MATTHEW LEEDS

Amiga Video Heats Up

The Amiga video market is heating up again. Commodore is starting to target the Fortune 1000 with direct marketing efforts, capitalizing on the lack of usable (and affordable) software for the Mac and MS-DOS machines. While the Mac market concentrates on producing video editing systems that run in the tens of thousands of dollars, Amiga solutions typically come in at far less.

Video editing is accomplished with a full suite of hardware, including video tape recorders (VTRs), special effects equipment, audio effects and sweetening equipment, and other goodies. The whole setup is managed by an edit controller—in effect, a video computer programmed via a list of editing events, called, appropriately enough, an Edit Decision List (EDL).

The actual process of producing the final edited version of a video production is called online editing, and it can be very expensive, with fees starting at $300/hr and going up from there. This is because all of the hardware in the edit suite is tied up during an edit session, and can't be used by anyone else. If you take time out to make creative decisions, want to try out different ideas, or just hit a creative wall, the meter just keeps on running.

It has become common practice to create preliminary EDLs offline, in an environment without all of the final editing hardware, and without the expensive price tag attached. Offlining can save thousands of dollars in editing costs.

Photon Video EDLP

The Photon Video Edit Decision List Processor (EDLP) allows you to prepare your edit decision lists offline, even at home. It provides full word-processing features, such as cut-and-paste, block moves, text search and replace, macros, real-time text scrolling, various print options, and menu or keyboard activated commands. It also offers edit list management commands, such as automatic or manual renumbering, automatic or manual ripple calculation, trim adjustments, ten constant registers, duration display, list cleaning, and list sorting on any column.

Online help is available at all times. You are always prompted as to what EDLP is expecting next. The explanation of each menu item can be displayed immediately, and a help screen describes the complete EDLP display.

Copyright ©1990. All rights reserved.
Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics, and related fields.

A minimum of special hardware is required. To transfer the list to the MS-DOS format, all that's needed is the appropriate disk drive (3 1/2" or 5 1/4"); conversion software is supplied. To transfer the list directly to the edit controller (depending on the model), you merely need a serial null-modem cable. EDLP supports many popular edit list formats, including CMX, ISC, GVG, United Media and Convergence. In addition, EDLP will translate a list for you from almost any other format.

The Photon Video EDLP fully supports Microllusions' "MicroSMPTE" time code reader and other readers with an RS232 serial port. The time code reader interface gives you on-screen time code display, and allows you to mark IN and OUT times for the edit list at the touch of a button. The unique Automatic Edit List Generation (AELG™) feature allows EDLP to accurately log the IN and OUT times from a cuts-only tape simply by reading the edited time code.

Useful Video Publications

If you're new to the video scene, two new publications can help you up the steep learning curve. Ampex Corporation's Magnetic Tape Division publishes *A Guide to Media & Formats*. This guidebook includes information on media formats for analog and digital video, digital audio, and digital data recording. It provides comparison charts, specifications standards, and format overviews that go a long way towards dispelling the confusion over various format options.

Once you've gotten some idea of what the differences between Betacam, Hi-8, and MII are, you can move on to *Television Measurements-NTSC Systems*, published by Tektronix. While not a handbook on how video works, this work includes a tremendous amount of information, and with a little study you can learn a great deal about the nuts and bolts of a video signal. Both of these publications are available at no charge, just for the asking.

Animagic

Animagic knows about the nuts and bolts of computer-based video. They've been using the Amiga to produce logo and title effects for major film clients. Although the television and corporate clients best served by the Amiga's video capabilities are new to Animagic, they have already produced graphics for Nissan and other customers. The Amiga has increased productivity by 20 percent, and in some cases has allowed the company to turn jobs around in a single day.

Upgrades And Trade-Ins

A single day may be all you have left to take advantage of a trade-in offer from Commodore. Until the end of March, you can trade in your Amiga 1000 for a discount on the purchase of an Amiga 2000 system. By giving your dealer your A1000, you can purchase an A2000 for $999.95. If you prefer an A2000HD, with trade-in it will cost $1,599.95. A discount is also available on the A2500/30. Unlike the last time this trade-in was offered, you won't have the option of keeping your A1000.

Commodore is starting to target the Fortune 1000 with direct marketing efforts, capitalizing on the lack of usable (and affordable) software for the Mac and MS-DOS machines.

Commodore is making this offer to A1000 owners because when the latest version of AmigaDOS becomes available later this year, the A1000 will not be able to support all of its features. A spokesperson for Commodore stated that, among other things, the new ECS (Super Agnus and Denise chips) will be needed to take complete advantage of AmigaDOS V1.4. There have been rumors of other reasons that the A1000 will live forever with V1.3, and Commodore does not want to be seen as abandoning their early supporters.

For those diehards who refuse to trade in their beloved original Amigas, there may still be hope. A lone hardware developer is working on an add-in board for the A1000 that will let it use the ECS and other unmentioned hardware items to allow for hardware compatibility with V1.4. No word yet on his ultimate success.

PD Program Of The Month

PD program of the month is MadSizer, a mad hack by Khaled Mardam-Bey. It's a simple program that lets you size a window from any corner. Great fun as a practical joke on friends, and occasionally useful as well. ■

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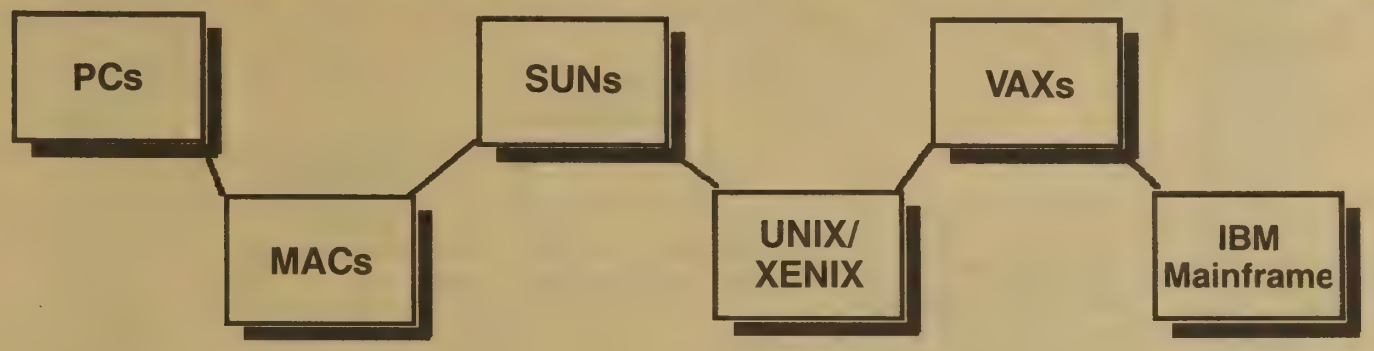

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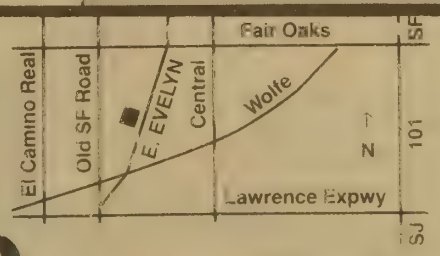

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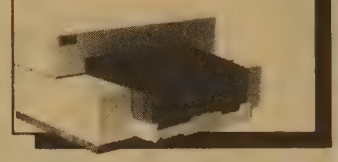

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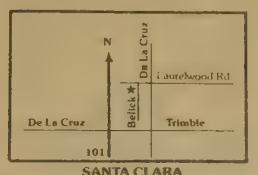

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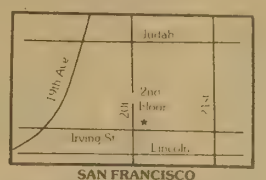

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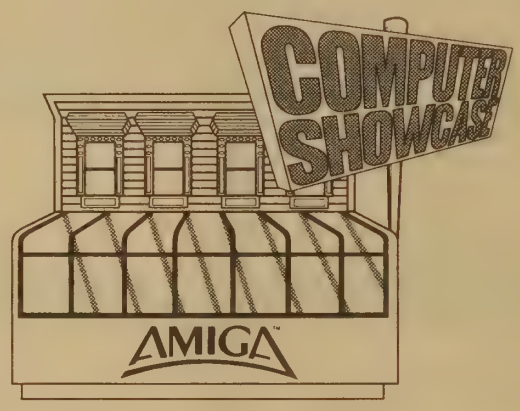

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BY DAVID HAWKINS

News From Atari

From time to time someone will ask me why I only write about Atari computers and programs, instead of about what's going on inside Atari. The answer is quite simple—I don't know anything about what Atari Corporation is like. Thus, I have no idea what Atari should be doing or any ideas about how Atari could improve. I'm not saying that ignorance is bliss, but it works for me.

I did hear some good news about some of the new people at Atari, and thought I'd pass that along.

User Groups

Bob Brodie is now Atari's User Group Coordinator. From what I've heard he's funny, accurate, and hard working. The weekend of February 17-18, he went to Michigan. Earlier in the week he visited ST ACE (the ST Atari Computer Enthusiasts) in Santa Rosa. He had a STACY, a STe, and a Lynx at the Santa Rosa meeting. Evidently he's willing to get out and do some traveling. Have your user's group contact him.

Development

Another important position at Atari involves contact with developers—the people who write, debug, and distribute software and hardware that works with the Atari. Charles Cherry is now handling that work, and again, all the reports have been positive. Some of Atari's policies involving developers are changing, so the following may not be completely accurate. If you are interested in developing software for the Atari, contact Charles Cherry directly at (408)745-2082, or write him c/o Atari Corporation, 1196 Borregas Avenue, Sunnyvale, CA 94086.

Latest Policy (Subject To Change)

The last I heard was that Atari was recognizing two groups of developers—those working on a commercial product and those who don't have commercial product as a primary goal. Either type of developer can register with Atari. I also have a note here that shareware does count as a commercial product.

Registering as a developer costs $250. A registered developer receives discounts on Atari hardware, a software kit with information about the ST/TT/STe, a copy of the Alcyon C compiler, the MADMAC assember, a debugger, a linker, a subscription to a newsletter, and online support. Developers with a commercial product also get marketing support and access to a customer registration address list.

Again, if you're interested in being a developer, need information, or have suggestions, contact Atari.

Vice President

Third on the list of people I've heard good things about is Bill Crouch, who is Atari's Vice President of Sales. I'm glad to hear that Atari continues to attract good people.

Atari Virus

By the way, there is a virus out there in the ST world—it's called the KEY virus. The KEY virus has been found in several commercial program distributions, so it would be a good practice to check for it even if you are careful about the source of your programs. To counteract it, you can get a program called vkiller from your local user's group or possibly from a BBS. The vkiller program was written by George Woodside.

If you have a disk that you suspect has a virus, one thing to do is get that disk to someone who knows something about viruses. You could take it to a user's group meeting, or get a copy of an antivirus program and see if it has instructions on where to send an infected disk.

Program Updates

I don't have a copy yet, but I've heard a lot of good things about the latest update of WordPerfect. If you're not sure if you're up to date, check the date in the "Information" box—it should be 8/18/89. For information about the update, contact WordPerfect Corporation, 81 North State Street, Orem, Utah 84057; (801)225-5000.

Likewise, PageStream, a desktop publishing program, is now at version 1.8. Again, I don't have an update myself, but have heard a lot of good things about this one. ■

Registering as a developer costs $250. A registered developer receives discounts on Atari hardware, a software kit with information about the ST/TT/STe, a copy of the Alcyon C compiler, the MADMAC assembler, a debugger, a linker, a subscription to a newsletter, and online support.

Copyright © 1990 by David Hawkins. All rights reserved. *David Hawkins is the host of the Atari conference on The WELL (415/332-6106); send email to dhawk. He has one of the first Atari ST 1040s sold in San Francisco. Both monitors, an Okimate 20 color printer, and disks all over the room.*

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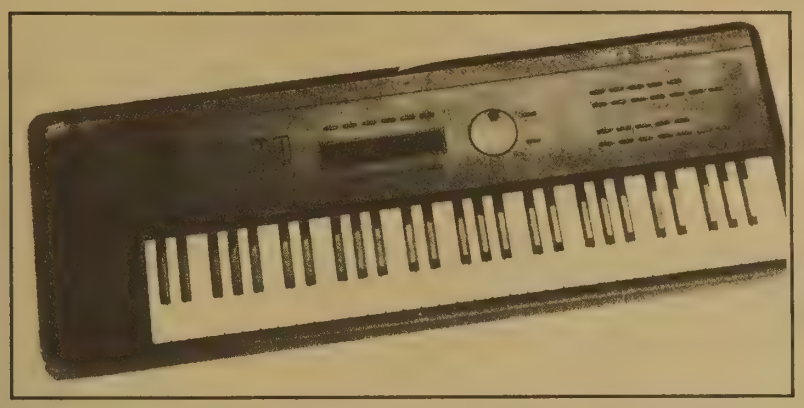

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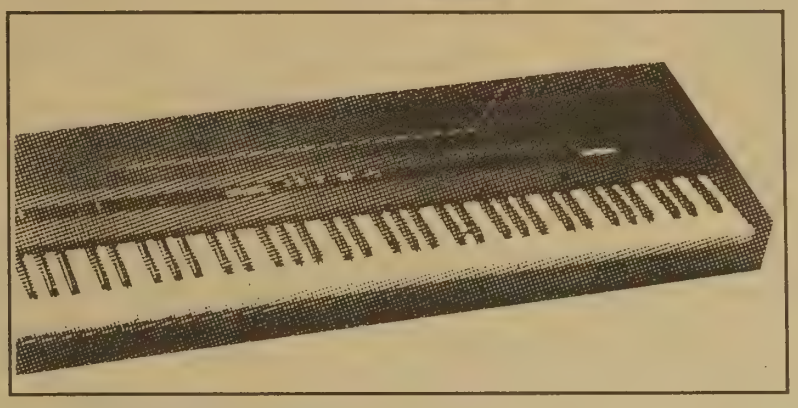

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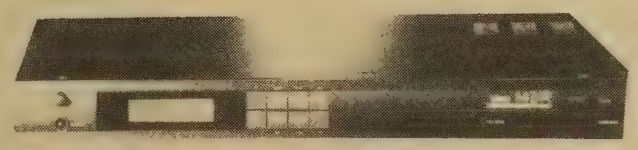

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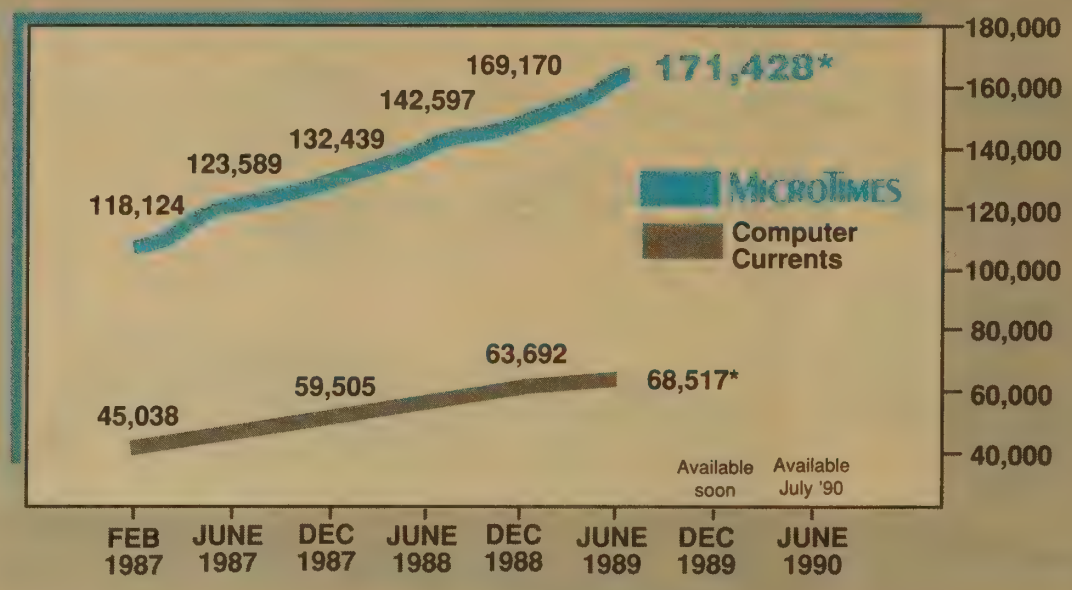

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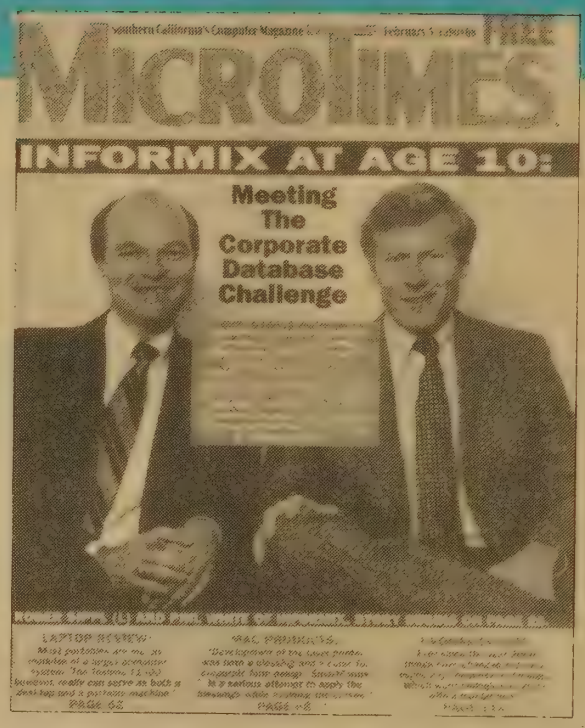

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• 386-20 MHz Basic System w/80 MB Seagate Hard Disk	1754	1894	2084	2144
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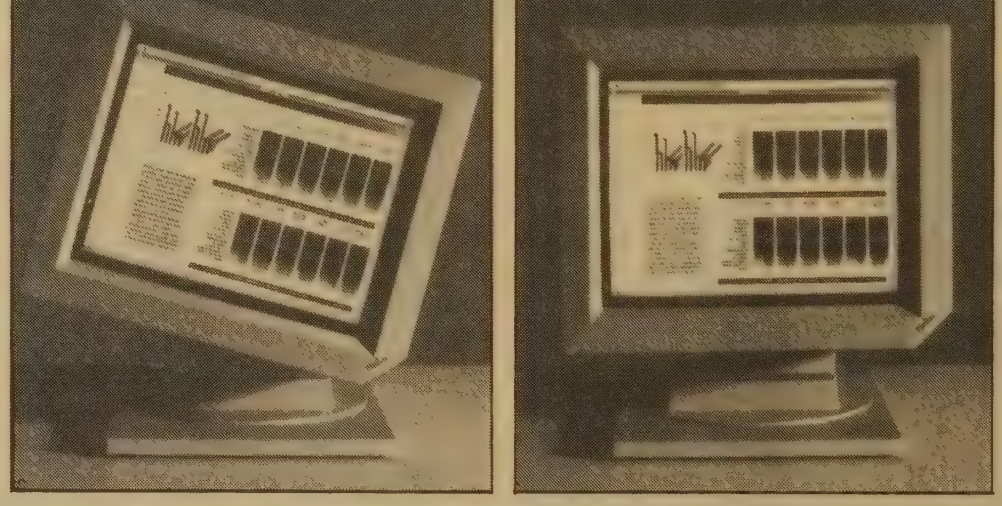
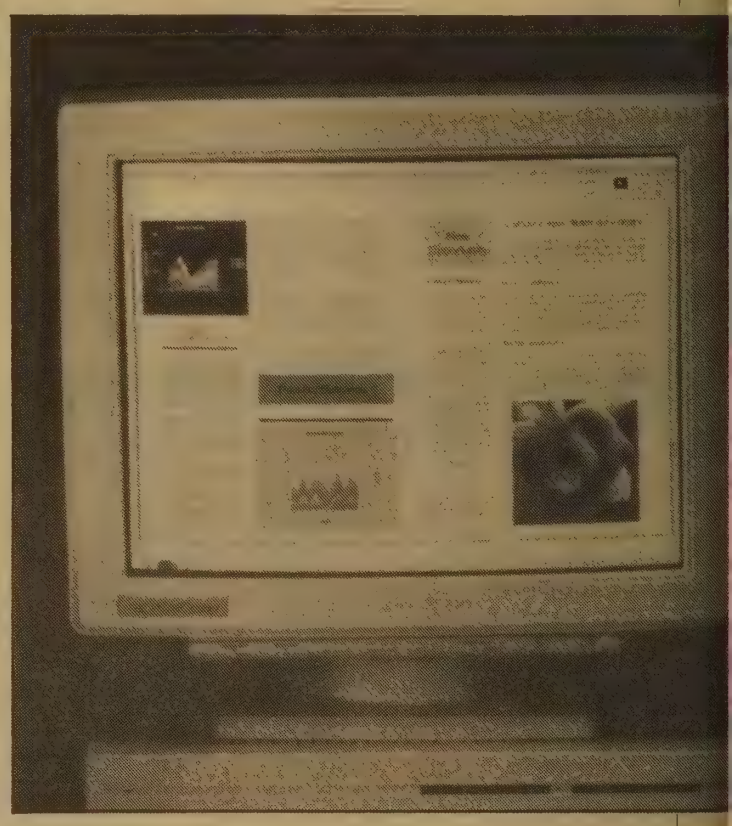


CalComp Two-page Display For Graphics

CalComp continues to add to its family of products for use on the Macintosh IIs for the graphics and design community. The DrawingCard two-page display systems include a single-card graphics controller and a 21-inch high contrast, flat screen monitor (color or grayscale). There are three models in the DrawingCard family: GrayVision, supporting 256 shades of gray; ChromaVision, an 8-bit color model supporting 256 colors; and ChromaVision Plus, an expanded version supporting up to 16.7 million colors for 24-bit photo-realistic applications.

A resolution of 1,152 x 870 pixels and the increased 21-inch monitor size combine to yield 25 percent more viewing area and a true two-page display for WYSIWYG capability. In addition, the monitor's 75 Hz vertical refresh rate provides a crisp, flicker-free picture. (Gray Vision, $3195; ChromaVision, $6395; ChromaVision Plus, $8595) CalComp Inc., 2411 W. La Palma Ave., Anaheim, CA 92801. (714)821-2000, 1-800-CALCOMP.



Radius Pivots Your Point Of View

The Radius Pivot display gives you both portrait (vertical) and landscape (horizontal) in a single display. With Pivot, a simple twist rotates the display 90 degrees from a full page portrait orientation to a full page landscape orientation. Pivot's Dynamic Desktop immediately recognizes the Macintosh desktop to match either orientation.

Providing both portrait and landscape positions in a single display allows greater flexibility in the use of applications. For example, word processing applications can be used in portrait orientation to manipulate text, and in landscape orientation to create bullet point overhead presentations. Spreadsheets are traditionally used in the landscape orientation, but can also be used in portrait orientation for text intensive report tables. Or you can create charts in landscape and then pivot to a portrait orientation to merge them with a text in a page layout application.

The Radius Pivot mechanical design includes special weights which balance the display during and after orientation. To ensure that the display characteristics remain unchanged when the orientation changes, a magnetic shield which isolates the deflection circuitry from the Earth's magnetic field was developed. The internal circuitry has been laid out to allow optimum cooling in both orientations, and the EMI shielding performs equally well in either portrait or landscape mode. (Radius Pivot Display, $995; Radius Pivot Interface for the Macintosh SE/30 and Mac II family, $695) Radius Inc., 1710 Foutune Drive, San Jose, CA 95131. (408)434-1010.

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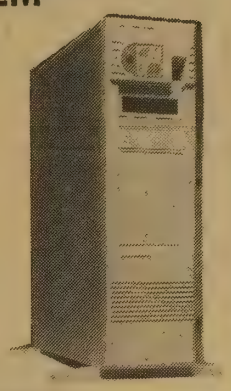

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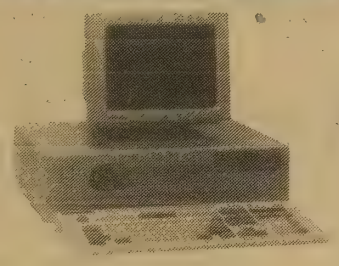

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USER GROUP NETWORK

BY MARY EISENHART

Talk And Gatherings

It's been quite a month, what with the **Computer Faire** (about which the consensus seems to be that the sessions were great, the exhibitor list lackluster, and the user group scene active) coming to town. User group activity continues enthusiastically, and I had many nice conversations with representatives of various groups while hanging out in the *MicroTimes* booth (which was located in User Group Row, next to BMUG).

I visited the **San Francisco PC Clone User's Group** in February at the invitation of **Catherine Curtis**, and had a fine time. This is a thriving group and a great resource for clone users, with plenty of tips, tricks, and resource sharing. Give Catherine a call at (415)648-8150 for further info.

A couple items in the **Calls For Help** department: **CompuMentor** (which, as you'll recall, matches volunteer computer-knowledgeable folks with nonprofits who need their assistance) is in dire need of some Bay Area FileMaker wizards. (This may have something to do with the fact that Apple has maintained an excellent community affairs program, donating Macs as well as MS Works and Claris software to many NPOs.) Speaking as a happy FileMaker mentor for **Bread & Roses** in Mill Valley, I highly recommend the experience... If this sounds like something you'd like to get involved with (there's an amazing spectrum of organizations waiting for help, so you're quite likely to find one working in an area you're interested in), call **Linda Smith** or **Barbara Gersh** at CompuMentor: (415)255-6040.

Also, **Otto Haiungs**, a frequent correspondent who's the president of the **International Blind Users Group**, asked us to pass along his group's request for volunteer help with text entry. Mac, Apple, and DOS users are all welcome; the files would be saved in plain text mode. Says Otto: "We send disks to blind and visually impaired computer users worldwide. Every two months we have a small amount of typing to do, entering articles on disk. We would drop off the article to be entered in the computer, and we could pick up the disk, or arrange for data transfer by modem."

If you can help, give Otto a call at (916)783-0364 or (916)645-8036.

USF's department of computer sciences is sponsoring a special lecture series on computer science-related topics through May 3. Autodesk's **Rudy Rucker**, who created CA Lab (to say nothing of some significant cyberpunk books) will be the featured speaker on March 29. Call (415)666-6530 for information on the series.

Also on the speaker front, **Jordan Rosenberg** writes to inform us that Borland's **Philippe Kahn** will be speaking, free of charge, to a gathering of user groups at **dB-Expo** at Moscone Center at 2 pm on March 27. This presentation is being sponsored by various Bay Area user groups, and you're all invited. Call (415)788-5358 for more details.

Remember: All the listings you see before you this issue will disappear next month unless we get new ones by **March 15,** so don't delay. You can use a variety of approaches to communicate with us: US Mail goes to User Group Network, 5951 Canning Street, Oakland, CA 94609. Send faxes to (415)652-4618 or (213)467-5486. Email can be sent to **microx** on **The WELL** (415/332-4335), **MICROTIMES** on **MacNET and MCI Mail**, or **{pacbell, hplabs, ucbvax, apple}!well!microx** on uucp. ■

Changes Ahead: Don't Be Left Out

In a continuing effort to provide you with timely, accurate and manageable information about user groups, professional associations, and bulletin board systems, we're instituting some changes. Beginning with our April issue, we will be featuring all-new user group and BBS listings. **If you want us to keep listing your group or board, send us a new listing now!**

DEADLINE FOR INCLUSION IN THE APRIL ISSUE IS MARCH 23!

Free user group and association listings are limited to the group's name and a ten-word description, **including the mailing address and contact phone number.** They will be deleted at six-month intervals to ensure timeliness and accuracy of information.

Free BBS listings are also limited to the board's name, sysop's name, and a ten-word description including parameters, baud rate and phone number. Because we have an ongoing problem of boards shutting down without telling us, much to the annoyance of would-be callers and the phone number's new owner alike, we will delete these listings after they've run three months.

You can update or renew your listings at any time.

If you want to run a longer listing, please check our attractively priced classified ad section.

Please note that any changes not appearing in this issue will not appear until the April issue.

Thanks!

—MicroTimes editors

Bulletin Boards

INTERNATIONAL

Cassia Express. (065)344-9163. 300/1200/2400 24 hrs. Singapore. Sysop: N.M.Rahman.

FidoNet Argentina. (054) (011)541-22-419. 8-N-1 3 pm-11 am PST. The 1st fido node in Argentina has over 450 subscribers. Specializes in issues from S.A. PD software library to d-load. Sysop: Pablo Kinman.

Janis II. (03)255-8856. 24 hrs, 1200/2400/9600. Japan Newsbytes, USA Today, InfoMat magazine, Online Digital Music Review. Over 500 megs info & D/L Pgms on HDD. Sysop: Pete Perkins. Voice: (03)255-8880.

Remote Bulletin Board (Singapore). (065)445-1646. 9600/2400/1200 24 hrs. 218 Mb Online (IBM upload/download). Sysop: Umar A. Rahman.

203

Terrapin Station. (203)656-0134. Grateful Dead Board. Sysop: Klaus and Gretchen Bender.

209

Bertha Board BBS. (209)823-0093 300/1200/2400/9600, or (209)239-9853, 1200/2400, 8-N-1, 24 hrs. MS-DOS, others. 220 Mb online. Emphasis on programming. Uploads and downloads. No fee. Sysop: Kenneth Roach.

Don's Dental Service. (209)239-4828. 8-N-1, 24 hrs, 1200/2400. Online dental supply catalogs, No. CA Society schedules, post-graduate course schedules from UCLA, UOP, and Cal. Free. Sysop: Don Carlson.

Night Rider BBS. (209)432-4458, 24 hrs, 1200/2400. Two lines running FX-BBS. MS-DOS 100+ meg. Real-estate and business oriented. Upload and download from a large P/D files section. No fee, no registration required. Sysop: Jim Avey.

Oasis Software Library. (209)823-2803, 300/1200/2400, 8-N-1, 24 hrs. Shareware and PD for IBMs and compatibles. No fee but registration required. Sysop: Tim Campi.

Silicon Realms. (209)754-5530. 300/(1200 Noon) 9:30 am to 6:30 am. Formerly Motherload 64. Commodore, PET & Plus/4. Programmers board, Continuing & Short Story boards, FRPG. Sysop: Joe Commodore.

SMERDON'S CASEL (California Attractions, Sights and Entertainment Listing). (209)521-4910, 8-N-1, 24 hrs., 300/1200/2400. Information on over 700 things to do and see in California. Free. Sysop: Sharon Smerdon.

The Backdoor BBS. (209)952-9430, 300/1200/2400, 8-N-1, 24 hrs. MS-DOS oriented board. Lots of software, online chess game, much more. Sysop: Randall Fox.

The Pathfinder. (209)474-1422, 8-N-1, 24 hrs, 300/1200/2400. Message base, MS-DOS software, 2 chess game areas w/player ranking system. Also lively Trade Ware 1000 campaign. Sysop: David Lanphear.

212

Lawyers Linked by Modem. (212)766-3788. Three hundred registrants. A BBS for law-related material. Sysop: Rees Morrison.

RadNET OnLine Services. 24 hrs. Online computer network for Nuclear Medicine professionals. Offered through Compuserve. Regular on-line conferences. Call for information and registration. Voice phone: (212)856-6449.

213

Ann Leung's Best Buys. (213)372-4050. Real estate in LA South Bay. Best buys are compiled daily by Gloria Kung. Type GO BEST upon entry.

Ashton-Tate Support. (213)538-6196. Free technical support, answers to questions about Ashton-Tate software products.

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Century Computers Amiga BBS. (213)697-2004, 24 hrs, 1200/2400. Sysop: Philip Marhqrst. Voice: (213)697-6977.

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- 386SX-16 MHz Motherboard 0 Wait State
- 1 Meg RAM Expandable to 4 MB
- 200 W Power Supply
- Hard/Floppy Controller
- 1.2 MB Floppy Drive (Japan Made)
- 101 Key Enhanced Keyboard
- Hi-Res Monographics/Printer Card
- 12″ Mono Amber Monitor (720x348)

COMPLETE SYSTEM **$949**

12 MHz 286 COMPLETE. . . . $649

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- Hi-Res Monographics/Printer Card
- 12″ Mono Amber Monitor (720x348)

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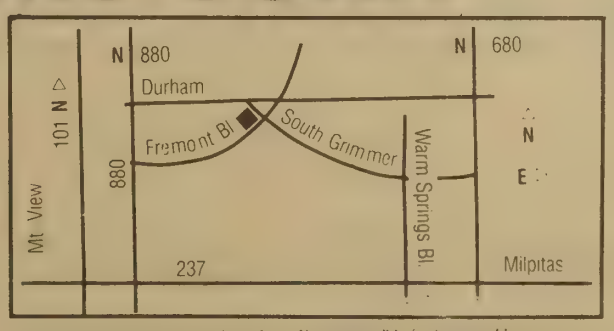

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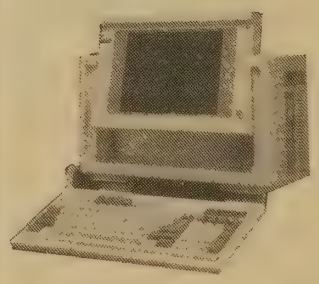
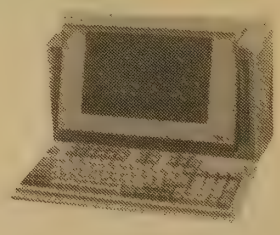
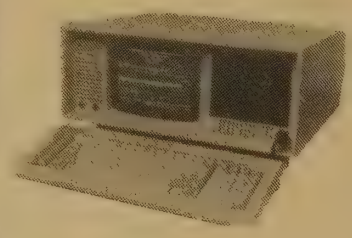
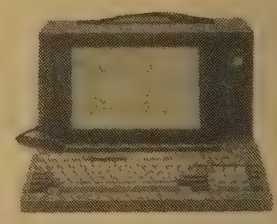

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- 220W Power Supply
- Dual Floppy & Hard Disk Controller
- 5.25" 1.2 MB FIoppy Drive
- Enhanced 101 Keyboard
- Case with Turbo & Reset Buttons and Power, Turbo & Drive LEDs
- Monitor, Display Card extra

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20MB (65MS)	1895	2215	2315
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- Intel 80386-SX 32 Bit CPU
- NEAT Chipset
- 1MB RAM Expandable to 4 MB
- Socket for Intel 80387-SX
- 8 Expansion Slots
- 220W Power Supply
- Dual Floppy & Hard Disk Controller
- 5.25" 1.2 MB Floppy Drive
- Enhanced 101 Keyboard
- Case with Turbo & Reset Buttons and Power, Turbo & Drive LEDs
- Monitor, Display Card extra

$899

OPTIONS :

VIDEO DRIVE	MONO12" 720X350	EGA14" 640X350	VGA14" 640X480
20MB (65MS)	1199	1519	1619
40MB (28MS)	1349	1669	1769
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- Intel 80286-12 CPU
- VLSI Chipset
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- Socket for Intel 80287
- 8 Expansion Slots
- 200W Power Supply
- Dual Floppy & Hard Disk Controller
- 5.25" 1.2 MB Floppy Drive
- Enhanced 101 Keyboard
- Case with Turbo & Reset Buttons and Power, Turbo & Drive LEDs
- Monitor, Display Card extra

$579

OPTIONS :

VIDEO DRIVE	MONO12" 720X350	EGA14" 640X350	VGA14" 640X480
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40MB (39MS)	999	1319	1419
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Seagate ST-138	279
Seagate ST-138R	269
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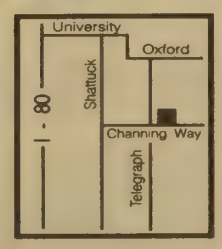

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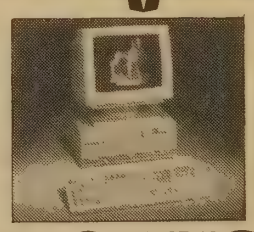

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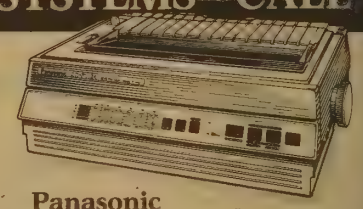

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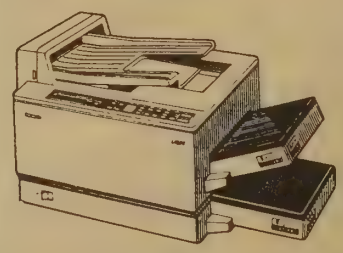

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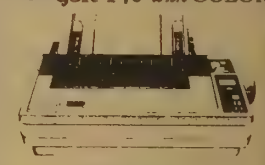

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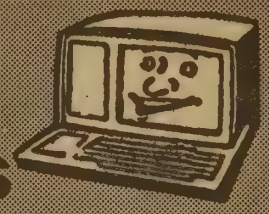

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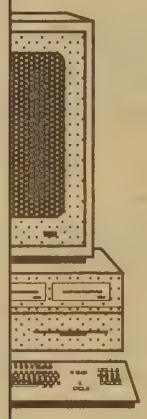

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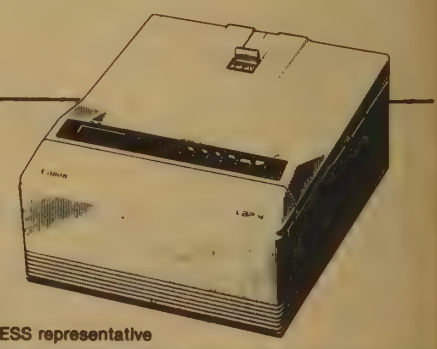

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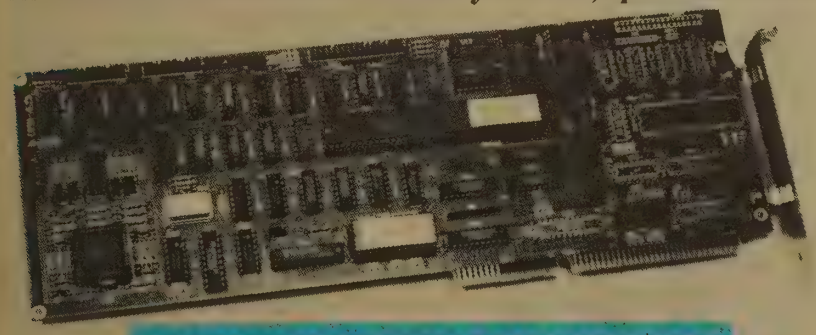

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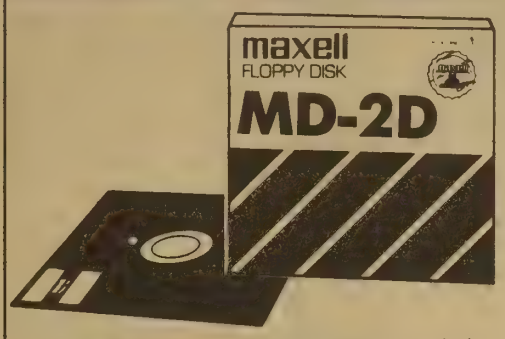

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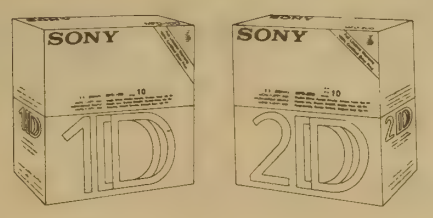

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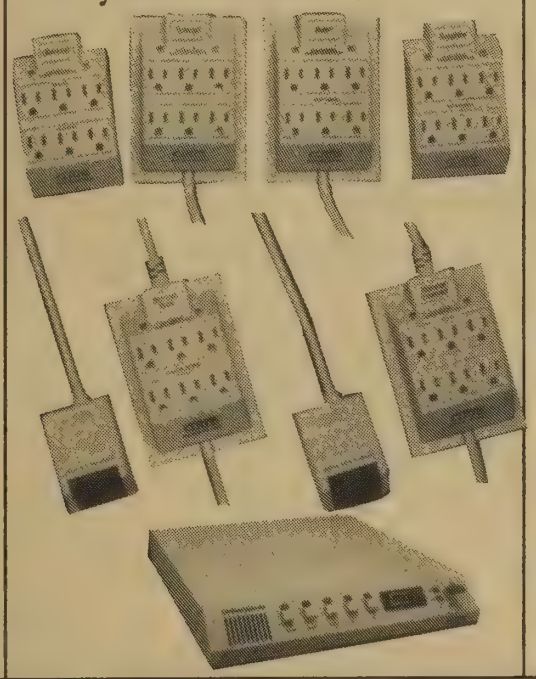

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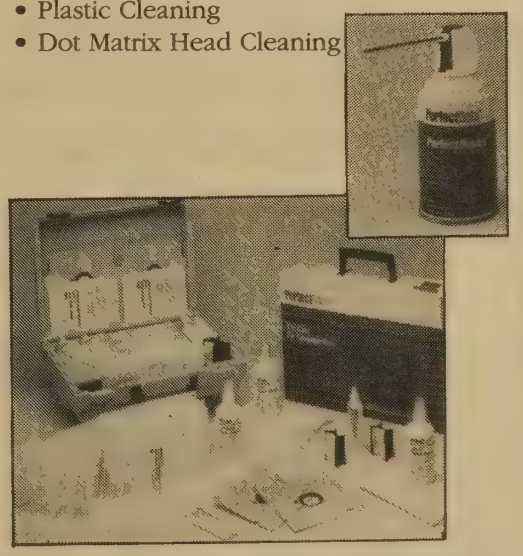

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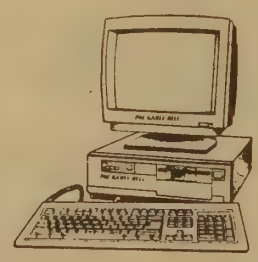

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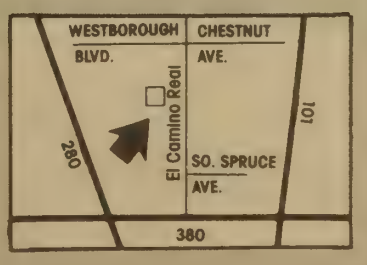

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Association for Women in Computing. Meetings: 1st Wednesday of each month, 6:30 pm, Stagecoach Restaurant, 44 Montgomery St., San Francisco. Call 655-3110 for information.

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East Bay Fog. Meetings: 2nd Wednesdays, Port of Oakland, 7th & Terminal. Call: Jean Koch, (415)272-9099.

East Bay User Group. Meetings: 3rd Wednesdays, 7 pm, 12500 Campus Dr., Oakland, Rm R-7, Call: (415)436-2453.

Entrepreneurial Support Group. CEO. Meetings: SASE, P.O. Box 2781, San Rafael, CA.

Ham Radio Computer Packet Group. Meetings: 2nd Fridays, 8 pm, Salvation Army, 4600 Appian Way, El Sobrante. Learn how to use your computer to broadcast all over the world with the fascinating world of Ham Radio. Call: Bob Fields, (415)237-3761.

High-Tech Gays. Meetings: 2nd Sundays, Part of the National Gay & Lesbian Task Force. Call: (408)993-3830.

High Technology Entrepreneurial Council. Meetings: Wednesdays, 6:30 pm, Piedmont Community Center, 711 Highland Ave., Piedmont. HTEC is a nonprofit corporation dedicated to providing software developers and other high tech entrepreneurs a forum for developing marketing strategies, building business relationships and exchanging experience and information. Call: Rachel Munoz, (415)339-3895.

Independent Computer Consultants Assn., Northern California Chapter. Meetings: Third Wednesdays, 6–9:00 pm, San Francisco Airport Hilton. Call: ICCA, (415)441-2948.

Independent Computer Consultants Association (ICCA). A national professional association dedicated to ethical standards in computer consulting. Provides a computer consultant referral service. Meets monthly. Call: (415)441-2948.

Microcomputer Users of Santa Cruz Fog Affiliate #116. Meetings: 2nd Thursdays, Green Acres School, 966 Bostwick Lane, Santa Cruz. This facility is wheelchair accessible. Call: Barney, (408)476-0504.

MORE: Modem users Of The Redwood Empire. Meetings: Thurs. July 14; Fri. Aug. 9; 7 pm, Roundtable Pizza, Highway 12 @ Stony Pt. Free membership for modemers who want to get together and talk about local boards. Includes novices to techno-wizards. Call (707)546-5203.

Mt. Diablo Technology Association. First meeting: Wednesday, Sept. 14. Others monthly at Michael's Restaurant in Walnut Creek. Lunch and evening meetings, send for calendar. Back by popular demand. Will explore common concerns in industry and educational developments. Call: Deborah Scott, (415)932-4828.

Network Users Group (NUG). Next meeting: July 7. Call for location and time. Panel discussion of workgroup software with several major software manufacturers represented. Call: (415)655-6500 for details.

North Bay Users Group (NBUG). Meetings: 2nd Thurs. 7:30-10 pm, 201 Maine St., Vallejo, CA. Family Computer Club dedicated to all forms of computing. Determine market opportunities, group research projects. (415)564-6669.

Northern California User Group. Meetings: Every 3 months. For schedule, Call: Ken Lebeiko, 881-2652.

Nota Bene User Group. Meetings: 3rd Tues. or Thurs., 7:30 pm Berkeley or Peninsula. For location and date, call: Thomas Ross, (415)845-2410.

PASS: Professional Association of Secretarial Services. Meetings: 2nd Saturdays 11:30 am, Oakland or San Mateo. Call: Nina Feldman, (415)655-4296.

Pioneer AWSSM (Association For Worldwide Software Support Managers). Meetings: 2nd Tuesdays, 6 pm. Call: Janice Corbo, 3Com Corp., (415)694-2841.

Pracsa, for Sysops & Users. Meetings: 2nd Wednesdays, 6:30 pm, Coco's Restaurant, 1305 South Mary, Sunnyvale. Call: Bill Strouse, (408)453-3321.

ProTel (Professionals In Telecommunications). Meetings: Monthly. Holiday Inn, 1221 Chess Drive, Foster City. ProTel is a network organization for people interested in telecommunications. Leave a message at (415)227-5637 for information.

San Jose User Group. Meetings: First Wednesdays. For location and time, call: Hanna Varniz, (408)984-8484.

SEF Marketing SIG. Meetings: 4th Thursdays, Teknowledge, 1850 Embarcadero, Palo Alto. Call: Don Morrison, (408)425-7222, or (415)854-7219.

Silicon Valley Computer Society. Contact Kent Stafford (408)286-2969. Or write to 2464 El Camino Real #190, Santa Clara, CA 95051.

Society For Technical Communication, Berkeley Chapter. Meetings: 2nd Wednesdays. International association of technical writers, editors, illustrators, and instructional designers. Call: Rae Montor, (415)531-2315.

Society For Technical Communication, Sacramento Chapter. Meetings: First Wednesdays, 6:30 pm, Coco's Restaurant, 7887 Madison Ave., Citrus Heights. International association of technical writers, editors, illustrators, and instructional designers. Call: (916)962-6282.

Software Entrepreneur's Forum (SEF). Meetings: 3rd Thurs. 1875 Embarcadero Rd., Palo Alto. Helps individual software developers and startup software companies. Call for complimentary newsletter. (415)854-7219.

South Orange County Computer Club. Meetings: 3rd Thursdays, 7:30 pm, Westminster Community Ctr., Westminster Blvd. east of Beach. Friendly discussion, presentations on using computers, public domain software libraries. All computer types.

Technology Executive Roundtable (TER). Meetings: Fourth Tuesdays, 6:00 pm, Santa Clara.Call: Jenny Hoyt, (408)997-1826.

The Hispanic Computing Association. Meetings: 3rd Thursdays, DataDesigns/American Music, 2388 Mission St., SF. Spanish/English Computer Information, PC & Mac presentations and solutions. Call: Juan Lira, (415)824-8337.

United Sysops Association (USA). Meetings: 2nd Wednesdays, Coco's Restaurant, 1305 S. Mary Avenue, Sunnyvale. The emphasis of the group is to help the sysops around the world, and especially in the countries of the Pacific Rim. Call: William Strouse, (408)453-3321.

Valley of the Moon Users Group. Meetings: 2nd Saturdays monthly, 10:00 am, Moose Lodge, Sonoma. All systems welcome. BBS, 300 Baud, 24 hours, (707)996-7922.

Women's Computer Society. New organization to increase the computer literacy of women of all ages. WCS will represent a number of SIGs, including the already established Women's-MUG). Call: Rita Zokaei or Judy Onton, (415) 574-8225/(408)867-2842.

User Groups

AMIGA

ACCESS (Amiga + Commodore Computer Enthusiasts Society). Meetings: 2nd Thursdays, 7 pm, Livermore Airport terminal off I-580 Airway exit. Call: Paul Tibbals, (415)829-6053.

ALF—Amiga Learner's Forum. Meetings: 3rd Sundays, 6 pm, Cupertino Library. Beginners Group. Call: (408)262-9334.

Amiga Addicts Anonymous. Meetings: Newsletter, public domain library, demonstrations. Write PO Box 4669, Walnut Creek, CA 94596. Call: (415)689-3453.

Amiga East Bay Info Exchange (AEBIE). Meetings: 2nd Tues., 7 to 9 pm, 11185 San Pablo Ave., El Cerrito. Write to P.O. Box 485, Pinole, CA 94564.

ASCITEC: The Amiga Science & Technology Users Group. Meetings: 2nd Thurs., 5-7 pm, Lockheed, B/157, Rm. 4-C, Sunnyvale, CA. Scientific/Video Applications. Classes available.

AUGment - Amiga Users Group of Silicon Valley. Meetings: 2nd Fri., Write to P.O. Box 1863, Fremont, CA 94538 for more info.

AUM—Amiga Users Of Marin. Meetings: Third Wednesdays, 7:30 pm, room 191, Science Center, College of Marin, Kentfield. Call: Bob Galvan, (415)924-5384.

Bay Area Amiga Developers Group (BADGE). Meetings: 3rd Thurs., 8 pm, Turing Auditorium, Stanford University, Stanford, CA. For all Amiga programmers. No membership fee.

CWEST Bay Area Commodore Users Group. Meetings: Third Thursdays, 7:00 pm, Fort Mason, Bldg. C, Rm. 215. Support C-64/128 and Amiga. New Users welcome. Write PO Box 146731, San Francisco, CA 94114-6731.

HAUG (Hayward Amiga Users Group). Meetings: 1st Wednesdays, 7 pm, Mulford Gardens Community Center, San Leandro. Call: Ken, (415)352-0220, or Kenny, (415)351-7349.

Northern California Amiga Club. Meetings: Second Saturdays, 2 pm, Rico's. Supports Amiga. Write: PO Box 54, Bella Vista, CA 96008.

SMAUG (Salinas-Monterey Amiga Users Group). Meetings: 3rd Tues., at 7 pm, Seaside Library, 550 Harcourt Ave., Seaside, CA. Write PO Box 776, Castroville, CA 95012. Call Richard Binsacca at (408) 678-2518.

SVAUG-Scotts Valley Amiga Users Group. Meetings: 2nd Thursday, 7:00 pm, The Computer Room, Kings Village, Scotts Valley.

Vallejo Amiga People (VAMP). Meetings: 2nd Tues., 6:30 pm, Software 1st, Vallejo Corners Shopping Center. Contact Bill Braun at (707) 554-0263.

AMSTRAD

Amstrad Word Processing User Group (AWPUG). We are an exclusive Amstrad PCW Word Processing User Group. Call: Dennis Anderson, (707)795-8548.

North American Amstrad Users Group (NAAUG). National User group. For info send S.A.S.E. to NAAUG, P.O. Box 2178, Ferndale, WA 98240.

APPLE

A.P.P.L.E. Co-op. Meetings: National User Group. Call A.P.P.L.E. Magazine. Write: 290 S.W. 43rd Street, Renton, WA 98055. Or call (206)251-5222 for more info.

Apple Pickers of the Redwood Empire. Meetings: 2nd Sat., 10 am, Santa Rosa JC, Shuhaw Hall, Rm. 1735. Call for sample newsletter. (707)763-8322.

Apple Sac. Meetings: 1st and 2nd Wednesdays, 3rd Tuesdays, 7 pm, Madison School on Harrison St. in Sacramento. Newsletter, demos, swap meets, PD files, BBS.

B.E.A.R. Apple II National Users Group. Meetings: send S.A.S.E. to B.E.A.R., 4719 Meridean Ave. #401, San Jose, 95118. Printshop & Appleworks files, monthly newsletter.

Diablo Mac Users' Group (DMUG). Meetings: 4th Wednesdays, 7:30 pm, Glendale Federal Bank, Seminar Room, 3101 Crow Canyon Commons, San Ramon, CA. Call: (415)828-4995.

Diablo Valley Apple Users. Meetings: 1st Mon, 7 pm, Willow Creek Ctr., 1026 Mohr Lane, Concord, CA. SIG's meet monthly. Featuring library of pub. domain software & club's DOM's. Newsletter, demos, group buys hard/software.

GravenStein Apple IIGS Users Group. Meetings: 3rd Saturdays, 10:00 am, Coddingtown Mall, Santa Rosa. User group to explore new and existing programs and uses for the IIGS, to order equipment and material as a group for quantity discounts and to encourage the use and development of the IIGS among current, new and potential users. Call: Aaron Lamar, president, 938-8479.

San Francisco Apple Core. Meetings: 2nd Tuesdays, 10 am, Daly City Library, 40 Wembley. BBS, SIGS, PD/SW library, Help List, Newsletter, more. Call: 398-2335/771-5830.

San Leandro Apple User Group. Meetings: 1st Thursdays, San Leandro HS, Rm. 213. New owners to experienced users welcome. AppleWorks, software and telecommunications SIGs meet monthly. Call: (415) 483-6046.

Society For The Prevention Of Cruelty To Apples. Meetings: 2nd Wednesdays, 7:30 pm, Fremont Main Library, 39770 Paseo Padre Pkwy. Call: Dean Fern, (415) 537-3439.

Tri Valley Apple II Users Group. Meetings: 1st Thurs., 6:30 pm. Call Esther Farnstrom at (415) 829-3672 or Dan Balsey at (415)828-6237 for meeting location.

ATARI

ABACUS (Atari Bay Area Computer Users Society). Meetings: 1st Saturdays, Christ Lutheran Church, Quintara St. at 20th Ave., SF. Open to all Atari XL/XE and ST users. $20/yr. Call: (415)753-8483.

Bay Area Atari Users Group (BAAUG). Meetings: General meeting and ST users meeting 1st Mon., 7:30 pm, Agnews State Hospital Auditorium at Palm Road & Circle Drive. Off of Lafayette Blvd., Santa Clara. On 2nd Tuesdays. 8-bit users meet at H-P, Wolf and Pruneridge, Cupertino. Call: Joe Fischer, (408)988-3065. BBS: (408)247-1257.

COAST (California Original Atari ST Users Group). Meetings: 3rd Wednesdays, 7 pm, 2105 Bancroft, Berkeley. Call: (415)945-1949.

Diablo Valley Atari Computer Enthusiasts (DACE). Meetings: 1st Thursdays, DACE supports all Atari computers. Newsletter, demos, raffles, DOMs, and programming SIGs. Call: Larry, (415)689-5160.

Sacramento ST Users Group. Meetings: Second Wednesdays, 7 pm, Pac Bell Auditorium, 2700 Watt Ave., Sacramento. Supporting Atari ST and Mega ST computers.(916)944-1291.

San Leandro Computer Club. Meetings: 1st Tuesdays, 8 pm, San Leandro Community Library. Keith Sammons, (415)887-2008.

South County Atari Users Group. Meetings: 2nd Wednesdays, 7 pm, San Jose Computer Store, 640 Blossom Hill Rd., San Jose. Call: Ron Reade, (408)225-7162.

AT&T

AT&T Computer UNIX User Group. Meetings: 4th Wednesdays, 7 pm, AT&T Building, 1090 East Duane, Sunnyvale. Call: Thad Floryan, (408)985-7108.

AT&T Computer Users Group - South Bay. Meetings: Third Wed., 7:00 pm, AT&T Bldg., 1090 E. Duane, Sunnyvale, CA. Call: Joe Lipsig (408)522-4114. BBS: (408) 462-6329.

North Bay AT&T Computer Users Group. Meetings: 1st Wed., 6:30 pm, AT&T building. Call: Joe Mahoney (415)586-8376. BBS: (415)829-6027.

Tri-Valley AT&T Computer Users' Group. Meetings: Third Thursdays, 6:30 pm, 5794 West Las Positas Blvd., Pleasanton. Call: Ed Novi, (415)224-2996, Joe Mahoney, (415)540-2219.

BLIND USERS GROUP

International Blind Users Group (I-BUG). As a member you will receive 6 issues of Compu-Help-On-Disk as well as your own ID and password to CompuHelp. $20/yr. Call: (916) 783-0364.

CAD/CAM

San Francisco Bay Area CAD-DCA User Group. Meetings: 3rd Wednesdays, 6:30 pm. Call: Lupe Chavarria, (415)449-0230.

San Francisco/Marin AutoCAD Users Group. Meetings: 2nd Tuesday evenings. $20 annual membership fee & newsletter. For further info, call Volker, 331-9466.

Sonoma County AutoCAD Users Group. Call (415)777-9144 for info.

TCUG, Textile Computer Users Group. Meetings: Bimonthly, call coordinator for location and time. Thirty-seven members and growing. We use all types of computers to produce textile designs and run textile equipment. Call: Margaret Copeland, (415)284-1635.

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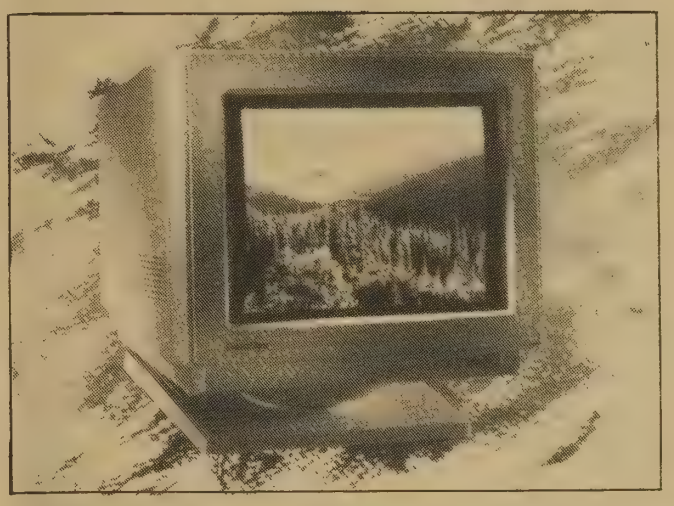

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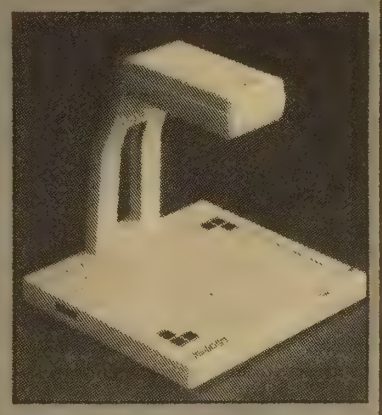

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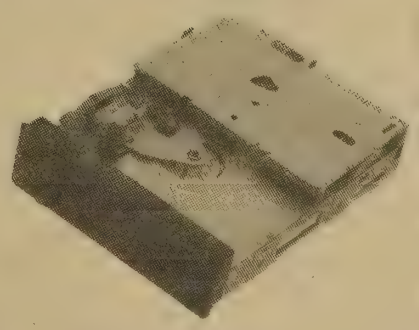

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COMMODORE

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ACCESS (The Amiga And Commodore Computer Enthusiasts Society). Meetings: 3rd Tues., 7:30 pm, Community Room of Homestead Savings & Loan, 999 E. Stanley Blvd., Livermore, CA. Contact Ron Kremkow at (415)449-1784.

Commodore 64 Software Users Group For New Commodore Owners. One-on-one help for new owners. Meeting place & time TBA by members. Call (714)531-2977 for info.

Cupertino Chapter of 64/More Commodore UG. Meetings: 3rd. Sat., BBS (408)946-6154.

CWEST Bay Area Commodore User Group. Meetings: 3rd Thurs., Fort Mason, Bldg. C, Rm. 215. Supports C-64/128, Amiga. Write P.O. Box 146731, San Francisco, CA 94114-6731.

Diablo Valley CUG. Meetings: 3rd Thurs., 7:30 pm, 1331 Concord Ave. Concord, PO Box 27155, Concord, CA 94527. For info write: PO Box 27155, Concord, CA 94527. Or call (415)932-2413.

F.U.N.H.U.G. - Fremont, Union City, Newark, Hayward User Group. Meetings: 3rd Thurs., 7:30 pm, Newark Public Library, 6300 Civic Terrace Ave., Newark, CA. A user-organized, user-operated user group not affiliated with any computer or software manufacturer or distributor.

Fairfield Commodore User Group. Meetings: 1st & 3rd Mon., Solano County Education Bldg. Write to P.O. Box 2778, Fairfield, CA 94533-9998 for info.

Marin Commodore Users Group. Meetings: 2nd Wednesdays, Redwood High. Call: 883-7748; BBS 883-2558—300/1200.

Mother Lode Commodore Users Group. Meetings: 2nd & 3rd Thursdays, 7:00 pm, Calaveras County Water District Board Room. Supports the Commodore PET, VIC, 64, Plus/4 C-16 & 128. Call: Larry Anderson, 754-5530.

Napa Valley Commodore Computer Club. Meetings: Third Mondays, Rapoport's, 2225 Brown St., Napa. Write to: PO Box 2324, Napa, CA 94558.

North Valley Chapter of 64/More Commodore UG. Meetings: 2nd. Sat., BBS (408)946-6154.

PLUG (The Plus/4 Users Group). No regular meetings. Over 800 members internationally. Write to P.O. Box 1001, Monterey, CA 93942 for info.

San Jose Chapter of 64/More Commodore UG. Meetings: 1st. Sun. BBS (408)946-6154.

Silicon Valley Commodore Club. Meetings: 4th Wed., 7 pm, Hewlett-Packard, 5301 Stevens Creek at Lawrence & 280. C-64, C-128, & Amiga.

COMPUTER ASSOCIATES

Computer Associates Users Group. Meetings: Third Wednesday of the first month of the quarter, 238 Texas St., San Francisco. Come share ideas and information with other local users of Computer Associates Accounting Software. Call: Beth E. Markus, (415)864-6770.

DATAEASE

Bay Area DataEase Users Group. Meetings alternate between San Francisco and Palo Alto. Contact Kermit Carter at (415)945-7817 for info.

DBASE

dBASE SIG/SFPCUG. Meetings: 3rd Thursdays, 7:30 pm, 6 N. San Pedro Rd., San Rafael. Call: John Stephenson. (415)488-0342.

dBASE Users Group of Marin & Northbay. Meetings: monthly, call (415)488-0342 for info. Open membership, beginners through developers.

dbDVLPRS.Professional Database Programmers Association. Meetings: 2240 Buchanan, Ste. 5, San Francisco. Database design in micro and micro-to-mainframe environments. Includes dBASE II, III, VI, Clipper, Foxbase, dBXL, Quicksilver, Revelation, C, Pascal, Assembly, etc. Call: Lisa Biow, (415)655-7455.

DESKTOP PUBLISHING

Desktop Publishing SIG/GMUG. Meetings: 1st Tuesdays, 7 pm, San Francisco Business Times Building, 325 Fifth St., San Francisco. Call: 641-GMUG

Desktop Publishing SIG/SFPCUG. Meetings: 4th Tuesdays, 7:30 pm, 179 Parnassus Ave., SF. Call: Phil Smith, (415)566-3648.

First Publisher User Group. Members make up 8 1/2 x 11 formats for newsletters & tip sheets. $35 annual membership. Contact Raul Ibanez, (415)550-0785.

PC Desktop Publishing User's Group. Meetings: 1st Mondays, 7 pm. Berkeley. Call: Dr. C.J. Wallia. (415)848-8200.

PC Publishers Of Northern California. Meetings: 3rd Thursdays, 6 pm, 10430 Greenview Drive, Oakland. Chapter of Ventura Users Group. Membership $36/year, includes magazine, newsletter, & discounts. Call: Al Magary, (415)661-9270.

San Mateo Ventura Users' Group. Meetings: 2nd Mondays, 7:00-9:30 pm, 619 Bradford, Redwood City. Workshops, lectures, demonstrations of new techniques, shortcuts. Call: Eleanor Church, (415)726-3181, or Pam Sheble, (415)574-2003.

Ventura Desktop Publishing Users Group. Meeting: 1st Tuesday, 7-9:00 pm, 1650 S. Amphlett Blvd., San Mateo. Newly formed group. Call Eleanor Church at (415)726-3181, or Pam Sheble at (415)574-2003 for information.

VPUG (Ventura Publisher User Group). Meetings: 3rd Mon., 6:30 pm, Fort Mason, Bldg. A., Rm. 5, San Francisco, CA.

DYNABYTE

Dynabyte - Tahoe City Dynabyte Users Group. Swap, buy/sell - boards, parts, units. Write to Drawer 2629, Olympic Valley, CA 95730 for info.

EAGLE

Eagle Computer Users Group. Meetings: 2nd Sat., 9:00-12 noon Tandem Computer, 10435 N. Tantau Ave., Cupertino. Call: (408)972-1965.

EASYTRIEVE

Easytrieve Plus Users Group. Next meeting: June 14, Hyatt. Oakland. Call Debbie at Pansophic, (415)573-7100. All users welcome.

EPSON

Bay Area Epson Salts. Meetings: First Tuesdays, 7:30 pm, 2611 Broadway, Redwood City. Call: Joe, (415)364-0232; or Tom, (415)992-5475.

Epson Users of San Francisco Bay Area. Meetings: 1st Thurs., 7-10 pm, Fort Mason, Bldg. C, Rm. 216, San Francisco, CA. For users of Epson (QX, Equity, PX-8). Presentations, support network, newsletter, public domain software.

EXPERT SYSTEMS

Bay Area Expert Systems In Financial Services. Meetings: 4th Wednesdays, downtown San Francisco. Open to managers, programmers, and analysts in the financial services industry. Call: Blair Hesling, (415)624-3049.

FOXBASE+

FoxBase+ User Group. PO Box 20607, Oakland, CA 94620. New group now forming. Call Rachel Cohen. (415)465-3570.

GAVILAN

Gavilan User Group. Meetings: 2nd Thurs., 7 pm Lockheed Bldg. 162. Call (408)379-2774 for info.

HEATH

Bay Area Heath User Group

What's Happening?

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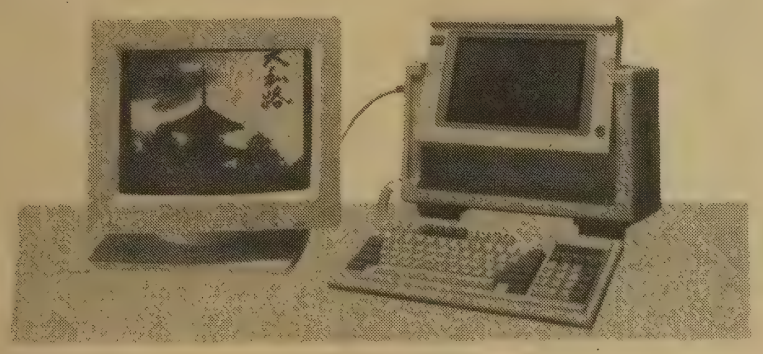

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- 1 MB installed expandable to 4 MB on Board
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- Teac 1.2 MB 5.25" floppy drive
- One 3.5" & two 5.25" drive bay available
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CASE FEATURES & ACCESSORIES

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(BAHUG). Meetings: 2nd Tuesdays, 7 pm, 2001 Middlefield Rd., Redwood City. Call: Ed Hayes, (415)326-3311.

HYPERCARD

HyperCard SIG/GMUG. Meetings: 2nd Wednesdays, 7 pm, 78-A Mars St., San Francisco. Call: 641-GMUG.

HyperCard SIG/SEF. Meetings: First Thursdays, 7 pm, Foothill College. David Gewirtz, (415)345-4620, or (415)854-7219.

IBM AND COMPATIBLES

6 User Group. Meetings: 2nd Mondays, 7 pm, Fort Mason Center, Bldg. E, Rm. 287. BBS: (415)621-8425. Call: (415)861-9321.

A New PC-CLONE CLUB. Meetings: 1st permanent meeting Oct. 7, 8 pm, Cal State Hayward, Rm. 2078, Meiklejohn Hall. Members with experience and large public library. Call: (415)538-2449.

AI - Expert Systems for Business (ESB). Investigate real business Expert System solutions for PC's. Guest speakers, discussions. Newsletter $18/yr, $26/yr bus. Call 564-6669 for info.

Bay Area TimeStar Users Group (BATUG). Meetings: 2nd Thursdays, 7:30 pm. Call: (408)983-4930.

Beginners SIG/SFPCUG. Meetings: 3rd Mondays, 7 pm, Chancellor's Conf. Rm., UCSF, 3333 California St., SF. Call: (415)211-9166.

Berkeley PC/Compatible User Group. Meetings: 2nd Mondays, 7:00 pm, 2618 Telegraph Ave., Berkeley. No fee, bulletin board, public domain library. Call: Mel, (415)526-4033.

C Language SIG/SFPCUG. Meetings: 2nd Mondays, 6:30 pm, Kam's Restaurant 2068 Center St., Berkeley. Call: Debee Norling, (415)644-1855.

Columbia SIG/SFPCUG. Meetings: 3rd Mondays, 7 pm, Chancellor's Conf. Rm., UCSF, 3333 California St., SF. Call: Dennis Tye, (415)566-0587.

CUE Club. MS-DOS machines. SIGs for other computers. BBS: (209)239-9853. For more info call (209)858-4401.

DataPerfect SIG/SFPCUG. Meetings: 2nd Mondays, 7 pm, Kam's Restaurant, 2068 Center St., Berkeley. Call: Christy Quinn (415)644-1855.

dBASE SIG/SFPCUG. Meetings: 3rd Thursdays, 7:30 pm, 6 No. San Pedro Rd., San Rafael. Call: John Stephenson, (415)488-0342.

Desktop Publishing SIG/SFPCUG. Meetings: 4th Tuesdays, 7:30 pm, 179 Parnassus Ave., SF. Call: Phil Smith, (415)566-3648.

Diablo Valley PC Users Group. Meetings: Walnut Creek, CA. Write: P.O. Box 8040, #117, Walnut Creek, CA 94596.

East Bay Fog. Meetings: Monthly meetings, Apostleship of the Sea, 600 Terminal St., Oakland. Newsletter, BBS. Call (415)272-9099 for more info.

Enable SIG/SFPCUG. Meetings: 2nd Wednesdays, 7:30 pm, Walnut Creek. Call: Sandi Baker, (415)946-1716.

FUNHUG—PC. Meetings: 3rd Wednesdays, 7:30 pm, Fremont Library, 39770 Paseo Padre Parkway, Fremont, in the Meeting Room. Mainly just the MS and PC DOS world. Send SASE to Russ Fischer, 2792 Arlington Place, Fremont 94555.

IBM & Compatibles Users Group (ICUG). Meetings: A mail-based user group with possible meetings. Not for PCjrs. $8/yr. Write: Dan Tuma, 30 Arjang Ct., Alamo, CA 94507-2041.

IBM Compatible Users Group. Meetings: monthly, call (415)969-6916 for info 7-10 pm.

IBM PC Users' Group Of The Redwoods (PCUGR). Meetings: 2nd Thursdays, 7 pm, Santa Rosa Vets Memorial, East Dining Rm. Newsletter, BBS, public domain & shareware disk library, $25/yr. Call: (707)527-USER.

IBM Technical SIG/SEF. Teknowledge. Call for dates and time. Call: Mike Schmit, (408)244-6826. or (415)854-7219.

Kay+Fun Peninsula Computer Club. Meetings: 2nd Thursdays, 7:30 pm. Social Room, 222 Laurel St., San Carlos. CP/M + DOS library. BBS: (415)572-8219. Call: 593-9981.

Lotus SIG/SFPCUG. Meetings: 3rd Mondays, 7 pm, Chancellor's Conf. Rm., UCSF, 3333 California St., SF. Call: Jerry Stern, (415)282-4100.

Marin-Sonoma PC Users Group (MSPCUG). Meetings: Last Tuesdays, Guzman Hall, Dominican College, Grand Avenue., San Rafael. Call: (415)491-HAWK.

Mid-Peninsula IBM-Club. For IBM employees only. Call Scott Maiden for info: (415)855-4509.

Modula-2 SIG/SFPCUG. Meetings: 3rd Thursdays, 7:30 pm, Call: Richard Lesnick, (415)398-3587.

MS Word SIG/SFPCUG, 3rd Mondays, 6:30 pm, Chancellor's Conference Room, UCSF, 3333 California St., SF. Vic Saravia (415)929-1993.

NewViews SIG/SFPCUG. Meetings: 4th Mondays, 7 pm, 179 Parnassus Ave., SF. Call: G. Watson, (415)398-3587.

OtherPerfect SIG/SFPCUG. Meetings: 2nd Mondays, 7 pm, Kam's Restaurant, 2068 Center St., Berkeley. Call: Quisty Quinn, (415)644-1855.

PC Clubhouse. Meetings: 1st Fridays, 8 pm, Cal State Hayward, Rm. 2078, Heiklejohn Hall. 2000 disk public library, expert help, software/hardware demos, $24/yr. Call: (415)538-2449 or 846-3575.

PC Desktop Publishing User's Group. Meetings: 1st Mondays, 7 pm. Berkeley. Call: Dr. C.J. Wallia, (415)848-8200.

PC UNIX SIG. Meetings: 1st Wednesdays, 7 pm, AT&T Training Center, 1090 E. Duane Ave., Sunnyvale. Learn more about such UNIX versions as Microport, XENIX and Minix. Starting a library of public domain source code. Call: Dan Kionka, (408)432-1300.

Sacramento PC User Group. Meetings: For information call Jackie Janssen at (916)383-6900.

San Francisco Computer Society. Meetings: 1st Mon., 7:00 pm. Laguna Honda School Conference Room (first Floor), 1350 7th Avenue, San Francisco. MS-DOS machines, Osborne, Kaypro, Morrow. Call: Ralph Gallagher, 929-0252.

San Francisco PC Users Group. Meetings: 3rd Mondays, 7:30 pm, Auditorium, UCSF, Laurel Heights, 3333 California St., SF. Call: (415)221-9166. BBS: (415)621-2609.

San Francisco PCjr Users Group (SFPCjrUG). Meetings: First Sundays, 7:30 pm, Rm. C205, Fort Mason Center, San Francisco. Demonstrations and discussions, club library, disks for sale. Call: John King, 472-7035.

Santa Cruz Computer Society. Meetings: 3rd Thursdays. 7 pm, Santa Cruz County Office of Education, 809 Bay Avenue, Suite H, Capitola. Call: 479-1180.

Silicon Valley Computer Society. Meetings: 4th Wed., 7:30 pm, Oak Room, at Hewlett Packard, on Pruneridge in Cupertino. Call Kent Stafford for info at (408)286-2969.

Silicon Valley FOG. Meetings: 3rd. Wed., 7:30 pm, Saratoga Community Library, 13650 Saratoga Ave.

Solano Community PC Users Group. Meetings: 3rd Monday, 7 pm, Fairfield High School.

Solomon User Group Of Silicon Valley. Meetings: Wednesday, August 10, 6:30 pm, Conveyor And Storage Dynamics, 2581 Leghorn St., Mt. View. Call Grihalva Associates, 39899 Balentine Dr., Suite 175, Newark, CA 94560; (415)659-1515.

South Bay AT&T PC UG. Meetings: Call for info. Call: (408)226-0116.

South Bay WordPerfect User Group. Meetings: Monthly, 13650 Saratoga Ave., Saratoga. Call: Martin Van Derpool, (408)238-8434.

South County PC Users Group. Meetings: Round Table Pizza Restaurant, 22457 Foothill Blvd., Hayward. Call: R.A. McCloud, (415)537-9899.

Teachers SIG/SFPCUG. Meetings: 3rd Mondays, 7:30 pm, Chancellor's Conf. Rm., UCSF, 3333 California St., SF. Call: Margaret Gwathmey, (415)982-4221.

TRS Nybblers. Meetings: 2nd Friday, 8 pm, Chabot College, 2555 Hesperian Blvd., Rm. 600, Hayward. MS/DOS, CP/M, laptops, CoCo's, Mod 1, 3, 4; Mod 2, 12, 16, 6000. PD software education modules, problem-solving committee.

Valley Computer Club IBM PC Users Group. Meetings: 3rd Wed., 6 pm, Xerox Bldg. 475 Oakmead Pky, Sunnyvale, CA. $24/yr member. Monthly VPUG News, access rights to VPUG-SIG Advice on desktop pub. techniques, new products, bugs, etc.

WordPerfect SIG/SFPCUG. Meetings: 3rd Mondays, 7 pm, Chancellor's Conf. Rm., UCSF, 3333 California St., SF. Call: Debbie Foster, (415)285-4534.

INMAGIC

San Francisco INMAGIC User Group. INMAGIC Meetings: Monthly. Call for dates and times. Call: Dana C. Ellingen, 423-4582.

KAYPRO

BAKUP. Meetings: 3rd Tuesdays, 7:30 pm, Albany Senior Center, 846 Masonic Ave., Albany. Call: Bob Athey, (415)526-3541.

Kay+Fun Peninsula Computer Club. Meetings: 7:30 pm, Social Room, 222 Laurel St., San Carlos. CP/M + DOS library. BBS: (415)572-8219. Call: 593-9981.

San Francisco Computer Society. Meetings: 1st Monday, 7:00 pm, Homestead S&L, 5757 Geary Blvd., San Francisco CP\M and DOS machines. No BBS. Call: Ralph Gallagher, (415)929-0252 for information.

LAPTOPS

Bay HPX, Laptops, and Handhelds. Meetings: 2nd Saturdays. Call: Jim Horn, (707)794-3130 or Michael Felsenstein, (415)564-8279.

MACINTOSH

A32, The Association Of Apple 32 Users. Meetings: 2nd Saturdays, GTE cafeteria, Mountain View. Membership includes monthly meetings, access to Disk of the Month, full BBS priviledges, the ICON newsletter, SIGs, discounts, and much more. Call: 263-0398.

APX, Inc. Macintosh. A national intercorporate computer users information service with several communications channels including an electronic forum on MacNet, newsletters, and local and national meetings and special panels. Several local chapters exist, you can start one too. Call: (408)745-0665, or write to: Mike Bailey, APX, 370 Altair, PO Box 175, Sunnyvale, CA 94086.

Bay Area MacForum. Meetings: 3rd Saturdays, noon, Daly City Library, 40 Wembeley. BBS, SIGS, PD/SW library, Help List, Newsletter, Newcomers Meeting, more. Call: (415)771-5830/398-2335.

Berkeley Macintosh User Group (BMUG). Meetings: every Thurs., 6 pm, Physical Sciences Lecture Hall, UC Berkeley Campus. SIG meetings on Mondays, Tuesdays & Wednesdays. Call for this week's topic. (415) 849-9114. BMUG, 1442A Walnut St., #62, Berkeley, CA 94709.

Christian Macintosh User Group, San Francisco Chapter. Meetings: 2nd Thurs., San Francisco. Newsletter and support available. Contact Rick Thrasher at (408)437-1913. Bible Study and DTP SIGS.

Christian Macintosh User Group, Silicon Valley Chapter. Meetings: 1st Thurs., San Jose. Newsletter and support available. Contact Rick Thrasher at (408)437-1913.

Desktop Publishing SIG/GMUG. Meetings: 1st Tuesdays, 7 pm, San Francisco Business Times Building, 325 Fifth St., San Francisco. Call: 641-GMUG.

Diablo Valley Apple Users. Meetings: 1st & 3rd Fri., 7 pm, Willow Creek Ctr., 1026 Mohr Lane, Concord, CA. SIG's meet monthly. Featuring library of pub. domain software & club's DOM's. Newsletter, demos, group buys hard/software.

EBMUG (East Bay Macintosh Users Group). Meetings: 3rd Tuesdays, 7:30 pm, Lakeview Library near Lake Merritt in Oakland,. Free!! Tutorials/Demo's. Bring blank disk. Meetings open to everyone. Call: Terry Pennington, (415)486-0147.

GMUG (San Francisco's Macintosh User Group for Gays and Lesbians). Meetings: 3rd Wednesdays, 7:30 pm. Call: 641-GMUG.

HyperCard SIG/GMUG. Meetings: 7 pm, 78-A Mars St., San Francisco. Call: 641-GMUG.

Mac Diablo Users Group (MDUG). Meetings: 3rd Tues., Community Room, Glendale Federal Savings, 3101 Crow Canyon Road, San Ramon.

MacCruisers—Santa Cruz. Meetings: 2nd Wed., Jade Street Community Ctr. at 45th Ave., Capitola, CA.

MacSEF, the Macintosh Developers SIG of the Software Entrepreneur's Fourm, Meetings: 7 pm, 2nd Tuesdays, Call for dates and time. Call: Barbara Cass, (415)854-7219 or, Tony Meadow, (415)644-9400.

Macintosh Users Of Computer-Ware (MUCoW). Meetings: 2nd & 4th Wednesdays, 7:00 pm, Above ComputerWare store, 490 California Ave., Palo Alto. Call: (415)496-1051 or 496-1033.

MacNexus—Sacramento's Macintosh Users Group. Annual dues, $30, includes monthly newsletter. Contact: MacNexus, PO Box 163058, Sacramento, CA 95816; (916)448-6481.

Macs Of Marin (MOM). Meetings: 2nd Thursdays, 7 pm, Redwood High School, 395 Doherty, Larkspur. Call: Steve Salzman, 459-5707.

Silicon Valley Computer Society's Macintosh SIG. First meeting: September 21, 7:30 pm, 6th floor offices of Arthur Young and Co., Mitsubishi/Plaza Bank Building, 55 Almaden Blvd., San Jose. A forum for shared ideas. First meeting will be a demonstration of HyperCard. Other demos are planned for future meetings. Call: Dennis Dawson, (408)947-5550.

Stanford Macintosh Users' Group (SMUG). Stanford community membership: $25; public membership: $35 per year. Call: 723-SMUG. BBS: (415) 723-7685.

TI-West. Meetings: 2nd Fri., 8 pm, Chabot College, Rm. 600, 25555 Hesperian Blvd., Hayward, CA. Access to a variety of pub. domain software, education modules "problem solving" peripheral committee.

Tri-Valley Macintosh User's Group (TMUG). Meetings: 1st Thursdays, 7 pm, 4695 Chabot Dr., Rm 114, Hacienda Business Park, Pleasanton. Newsletter, large P/D library. Call: James, (415)426-8756 eves, Mike, (415)838-6165.

MICROSOFT

Mac Diablo Users Group (MDUG). Meetings: 3rd Tuesday, 7:30 pm, Community Room, Glendale Federal Savings, 3101 E. Crow Canyon Rd., San Ramon. Small, helpful group.

Microsoft Word Users Group. Meetings: 4th Mondays, 7:30 pm-9:30 pm, Hewlett-Packard Cupertino, Oak Room Bldg., 48 Pruneridge, 100 yds. east of Wolfe off Hwy 280. August 22: Chris Donner, Pres. Access Softek on DRAGNET for Text Retrieval and Management. Call: Bill West, (408)356-8805.

Mirosoft Word SIG of the SVCS. Contact Bill West, (408)356-8805.

MINDSET

San Francisco Mindset Users Group. Call: (408)270-0251.

MORROW

BAMDUA (Bay Area Micro Decision Users Assoc.). Meetings: 3rd Tues., 7:30 pm, Albany Senior Center, 846 Masonic Street (just north of Solano) in Albany, CA. Voice: (415) 534-4257. BBS: (415) 654-3882. P.O. Box 5152 Berkeley, CA 94705.

San Francisco Computer Society. Meetings: 1st Mon., 7:00 pm. Homestead S&L, 5757 Geary Blvd., San Francisco. MS-DOS machines, Osborne, Kaypro, Morrow. Call: Ralph Gallagher, 929-0252.

MULTIMEDIA

Animators Users Group. Meetings: 2nd Wednesdays. Call: Greg Maldewin, (408)434-7001.

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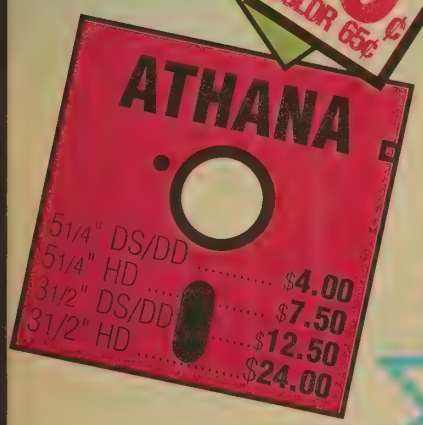

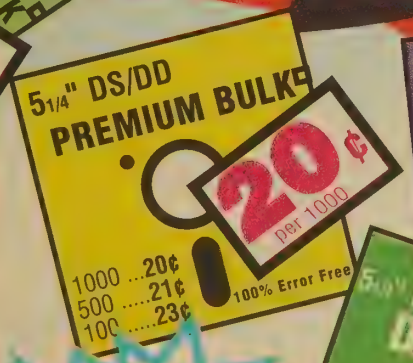

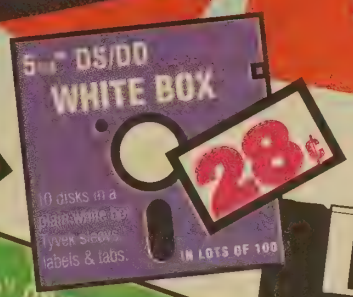

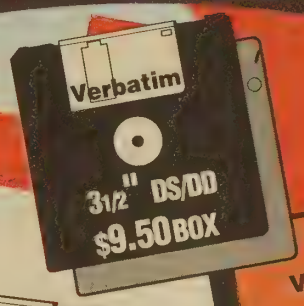

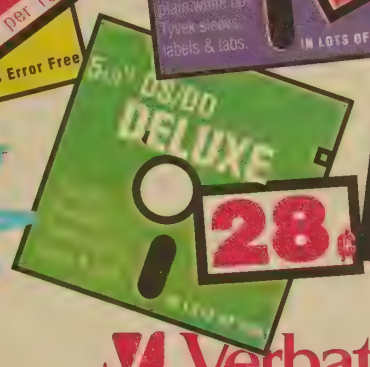

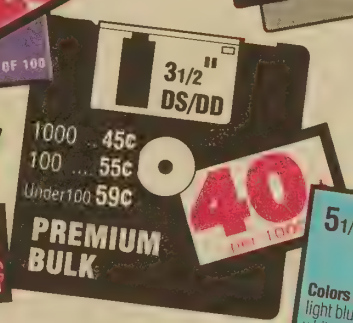

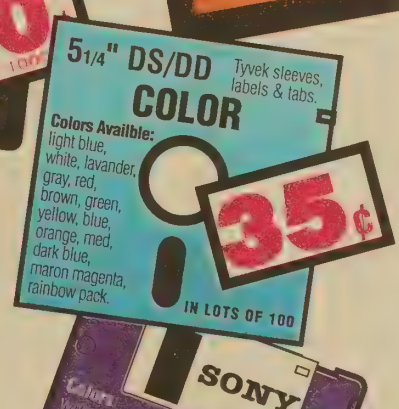
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NEC

Bay Area NEC/100 Users Group. Meetings: 2nd and 4th Wednesdays. Locations vary. For those interested in laptops, especially Kyocera 80C85 type (NEC 8201a, Radio Shack Model 100 or 102). Call: (415)658-1889.

NOVELL

Novell Users Group. Meetings: Third Wednesdays, 6:30 pm, Coco's restaurant, 1305 South Mary, Sunnyvale. Newsletter, bulletin board, product demos, assistance for beginners. Call: Bill Strouse, (408)453-3321 days; modem, 24 hrs: (408)453-3326.

ORACLE

Northern California Oracle UG. Meetings: Call (408)738-8330 for info. Meets every 3 months at different Bay Area locations. Newsletter published between meetings.

OSBORNE

San Francisco Computer Society. Meetings: 1st Monday, 7:00 pm, Homestead S&L, 5757 Geary Blvd., San Francisco. CP/M and DOS machines. No BBS. Call: Ralph Gallagher, (415)929-0252 for information.

PARADOX

Silicon Valley Paradox Users Group. Meetings: 3rd Tuesdays, except December. For information, call: Emily Alford, (408)285-0348, or LaTulipe at (408)646-0297.

PROGRAMMING LANGUAGES

APL Bay Area Users' Group. Meetings: 2nd Monday, 7:00 pm, 3700 Mt.. Diablo Blvd. #300, Lafayette, CA. Call: Tibor Horvath, (415)283-5611.

Bay Area Users Of Progress Software. Meetings: 3rd Wednesdays, 7:30 pm. 100-member group discusses and shares Progress programming tips and techniques. Call: John Campell, (415)857-0686.

C Language SIG/SFPCUG. Meetings: 2nd Mondays, 6:30 pm, Kam's Restaurant 2068 Center St., Berkeley. Call: Debee Norling, (415)644-1855.

CC County Programmers Group. For info write: 3115 Elizabeth Lane, Antioch, CA 94509.

Forth Interest Group of Silicon Valley. Meetings: 4th Sat., 1 pm, Oak Room, at Hewlett-Packard, on Pruneridge in Cupertino. Call George Shaw at (415)276-5953 for info.

Forth Interest Group, North Bay Chapter. Meetings: 2nd Sat., 1 to 5 pm, South Berkeley Community Library, corner of Russell and Martin Luther King Junior Way. One block north of Ashby BART station. Contact George Shaw, (415)276-5953.

Modula-2 SIG/SFPCUG. Meetings: 3rd Thursdays, 7:30 pm. Call: Richard Lesnick, (415)398-3587.

PIE (Programming and Interfacing Enthusiasts). Five SIGS for Mac, Apple II, and PC. PIE BBS open to member and non-members. Call: Duane B. McGhie, (408)252-4944.

Prolog Forum. Meetings: Monthly, 2nd Thursday 7:00 pm, Belmont and various locations. Prolog Forum is a group dedicated to supporting users of the Prolog computer language in artificial intelligence. Call Mark A. Epperson at (415)594-9981.

SEF OOP SIG. Meeting: Third Tues., 7 pm, Parc Place Systems, 2400 Geng Rd., Palo Alto. Call: Dean Ritz, (415)691-6727 or (415)854-7219.

R:BASE

East Bay User Group. Meetings: Last Thursday of each month. For location and time, call: Scott, 451-5316. endro Computer Club.

Northern California User Group. Meetings: Every 3 months. For schedule, call: Ken Lebeiko, 881-2652.

Peninsula R:Base User Group. Meetings: 2 Meadowsweet Lane, San Carlos. Call: Don S. Whitecar, (415)592-5033.

Peninsula User Group. Meetings: First Wednesdays. For location and time, call: Don Whitecar, 592-5033.

R:BASE User Group Of The Redwoods. Meetings: Third Wednesdays, 3 pm, Sonoma/Marin County rotating meeting places. Call: Jim Ray, (707)886-5315.

TANDY/RADIO SHACK

CoCoByte. Meetings: Last Saturdays, 2 pm-4 pm. Supporting the Tandy Color Computer 11, 2 or 3 with Spanish, English & French software. Write to: CoCoByte, c/o Fabian Rodriguez, A.A. 5976, Cali-COLOMBIA.

Model 100, 102 & 200 Support. Meetings: Int'l support by mail, voice & BBS. Free on-line weekly news letter. Write Club 100 984 Hawthorne Dr., Walnut Creek, CA 94596. Or call, (415)937-5039.

Tandy 1000 (The Mug). Mail-based user group w/ monthly newsletter. Not for PC jrs. Members communicate through newsletter. $8/yr. fee; checks to: Daniel Tuma, 30 Arjang Ct., Alamo, CA 94507-2041.

TRS Nybblers. Meetings: 2nd Fri., 8 pm, Chabot College, 25555 Hesperian Blvd., Hayward. MS-DOS, CP/M, laptops, Mod 1, 3, 4, Mod 2, 12, 16, 6000. Bud Gallagher (415)522-5960 or Bruce Jarvis, (415)846-3575.

REVELATION

Bay Area Revelation UG. Meetings: 1st Tues. Call: (415)759-1210.

ROBOTICS

Home Robots Now! Meetings: 2nd Thursdays. A two-year-old user group currently working on an autonomous robot for navigating in a house. Call: James P. Cruse, (408)475-7444.

SF Robotics Society. Meetings: 2nd Mondays, Exploratorium. We feature an experimenter's roundtable, guest speakers, an annual robot race, and a BBS—(415)752-7228. Call: Jim Strope, (415)668-7074.

SANYO

Sanyo PC Hackers. Meetings: 1st Wed., 7 pm, Mercury Room, Mercury Savings & Loan, 99 El Camino Real, Menlo Park.

SOLOMON

San Francisco Solomon III Users Group. Meetings: last Wed., odd months 6-9 pm, Price Waterhouse, 555 California St. 36th fl., San Francisco. Annual membership - $50; corp. membership - $75.

Solomon User Group of Silicon Valley. Meetings: For info contact Grihalva Associates, 39899 Balentine Dr., Suite 175, Newark, CA 94560.

SQL

SQL_Forum, The Bay Area SQL Database Server User Group. Meetings: First Thursdays, 6:30–8:30 pm, 394 Pacific Ave., Lower Level, San Francisco. An open group discussing client/server computing with SQLBase, SQLServer, and other SQL DB Servers, Fresh topic/speaker/demo. Call: Todd Ziesing or Ric Galgliardi, (415)731-2201.

SUN

Sun User Group. Call: (415)336-4343.

S—100

S—100 Business Users Group. Meetings: 4th Tues., 7:30 pm, Santa Clara Univ., Rm. 101, Bannan Engineering Bldg. CP/M & MS-DOS libraries. BBS: (408)262-5150, 8-N-1, 2400/1200/300.

TEXAS INSTRUMENTS

Bay Cities User Group. Meetings: 1st, 3rd, 5th Wednesdays, 7:30 pm, 1637 Morgan, Mt. View. Call: Jack, (415)964-4344.

Brea 99'ers Users Group. Meetings: 1st Mon., 7:30 pm, Mercury Savings, La Habra, CA.

San Francisco 99ers. Meetings: 3rd Saturdays, 3751 Elston Ave. Call: Fred, (415)530-8335.

Thousand Oaks Personal Computer Club (TOPCC). Meetings: monthly. Call: (714)686-0336.

TIMEX/SINCLAIR

Timex Sinclair East Bay Z80 Users Group (TSEBZUG). Russ English, (415)465-3116.

Timex Sinclair Peninsula Users Group (TSPUG). Contact George Mockridge, (408)878-1773.

Timex/Sinclair Users of Silicon Valley (GUTS/SV). Meetings: each Sat., 9 am, Stanford Univ., Jordan Hall (quadrangle), Math Bldg. RM 380C. SW library & newsletter. For topic check PDSE BBS in Sunnyvale (408)735-7390, 300/1200, 8-N-1, 24 hrs.

UNIFY

Unify Users Group. Information exchange, presentations and problem-solving related to Unify products. Email distribution is available for those connected to USENTE or UUCP mail at UUg-dist@mrspoc. Call: Steven List, 961-6112.

UNIX

SVNet. UNIX User Group. UNIX Meetings: 3rd Tuesdays, 10500 DeAnza, Cupertino. Talks on UNIX topics, books, and reviews. Call: Ralph Barker, (408)248-8649.

VENTURA PUBLISHER

San Mateo Ventura Users' Group. Meetings: 2nd Mondays, 7:00-9:30 pm, 619 Bradford, Redwood City. Workshops, lectures, demonstrations of new techniques, shortcuts. Call: Eleanor Church, (415)726-3181.

Ventura Desktop Publishing Users Group. Meeting: 1st Tuesday, 7-9:00 pm, 1650 S. Amphlett Blvd., San Mateo. Newly formed group. Call Eleanor Church at (415)726-3181, or Pam Sheble at (415)574-2003 for information.

Ventura Publisher User Group (VPUG, Inc.). Meetings: 3rd Wednesdays, 6–9 pm, Hewlett-Packard, Oak Room, Wolfe Road at Pruneridge, Cupertino. Workshop, Q&A, HW/SW demonstrations. Monthly 70-page mag, BBS, discounts, etc. $36/yr. Call: (408)227-5030.

VPUG (Ventura Publisher User Group) Meetings: 3rd Mon., 6:30 pm, Fort Mason, Bldg. A., Rm. 5, San Francisco, CA.

Don't miss a single issue. See instructions on page 164 in this issue for re-submitting your BBS, Association or User Group listing.

BUSINESS SOLUTIONS

CONTINUED FROM PAGE 68

ures itself as either a business system or a general BBS. In many cases the example systems will do the job with only minor modification. With DLX, the system prompts and display files are editable with an ordinary text editor. An average system, including custom prompts, and a custom database, can be set up in an hour or two.

With its easy-to-use chatting facility, online questionnaire and matcher support, DLX systems are often used as online dating systems, such as Los Angeles' Talk Channel. DLX also allows setup of a simple text database, which can be used to implement an online product catalog or phone list. It took less than five minutes to put a files catalog of 200 K into a DLX database, including the time to read the manual.

As a user, I enjoyed interacting with DLX systems. The chatting facility is well-designed, and the message system is easy to use. Other unique features include moderation of message sections so that messages do not become public until approved by a designated moderator. Online maintenance comes as a standard feature; the user log may be edited, and the system may be backed up to floppy while DLX is running in multiuser mode, as long as a few key files aren't affected.

However, for a program whose major advantage is ease of setup, DLX documentation could use improvement. One of DLX's strongest features is the menu prompt customization language, which includes sysop-definable functions. The menu prompt language allows sysops to program system behavior based on date, time, user parameters, and many other inputs. Unfortunately, this rich and powerful language is minimally documented, with only a basic command reference, and no examples.

Although the author of DLX is presently employed full time at a large software firm working on unrelated products, he maintains the official DLX support BBS and generally answers questions within 24 hours. Support is also available by voice during business hours.

There are no add-on modules available for DLX, nor is there a third-party development program, and this limits the extendability of DLX. The package cannot import from or export mail to FidoNet, nor is there a dBASE option. While DLX does not have many of the features of more complex packages such as TBBS, or The Major BBS, in applications where advanced features are not a requirement, and where ease of setup is a must, DLX would prove a good choice.

PC Works offers a DLX evaluation disk which, while not supporting modems, does everything else that the product is capable of, so that potential buyers can try it out before committing themselves. ■

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RESOURCES

Oracomm
Surf Computer Services, Inc.
71-540 Gardess Rd.
Rancho Mirage, CA 92270
(619)346-9430; (612)894-5580 (Tech Support Voice)
Example Systems: (619)346-1608 (Oracomm Central), (612)894-5879 (Tech Support); Mating Mystique (612)890-1001
Pricing: 2-line version: $390; 9 lines, $490; 16 lines, $590.

TBBS
eSoft, Inc.
15200 E. Girard Ave, Suite 2550
Aurora, CO 80014
(303)699-6565 (Voice); (303)699-8222 (TBBS Support BBS)
Example Systems: (415)426-0470 (Records Department), (415)484-4412 (MacCircles)
Pricing: 16-line version: $895; 32-line version: $1495; NetMail Option: $99.95; Remote Sysop Option: $99.95; Dbase III + Option: $995 (16 lines), $1795 for 32 lines.

The Major BBS
Tim Stryker
Galacticomm Inc.
4101 S. W. 47 Ave.
Suite 101
Fort Lauderdale, FL 33314
(305)583-5990 (Voice),
(305) 583-7808 (Demo System)
Example Systems: (805)736-5674 (FidoNet Option); (415)540-6114 (Online HyperText); (714)996-6666 (MedCom Info Systems); (505)881-6988 (Starlink); (818)341-3186 (Ad Week)
Pricing: $659 for 8 users; $959 for 16 users; FidoNet Netmail option, $99; source code $285 extra.

DLX
PC Works
3037 Golf Course Drive
Ventura, CA 93003
(805)650-0188 or (805)650-0192 (Voice); (818)506-7589 (Tech Support)
Example Systems: (206)644-9572 (Tech Support BBS), (818)506-0620 (Talk Channel)
Pricing: $795 for 16-line version.

INFO-HOST
A-Comm Electronics, Inc.
377 Route 17 South
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(201)288-7885 (voice)
(201)288-7792 (demo system)

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DTC 7287 RLL Contrl (1:1 Inter)	125
DTC 6280 ESDI (1:1 Inter)	175
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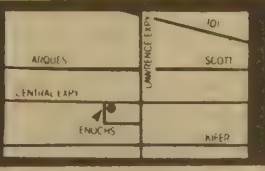

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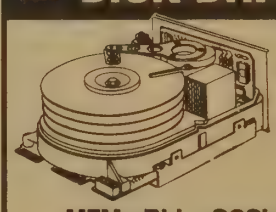

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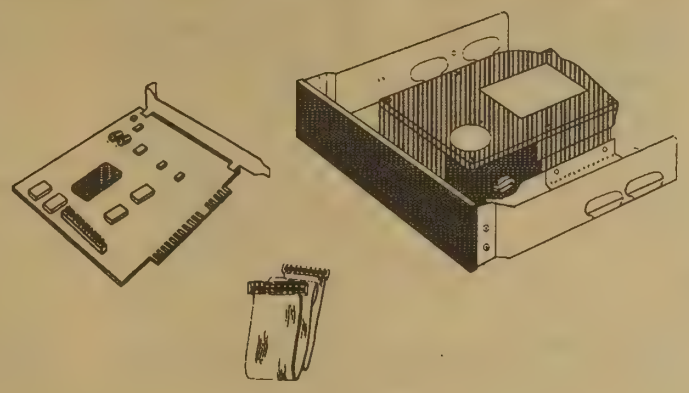

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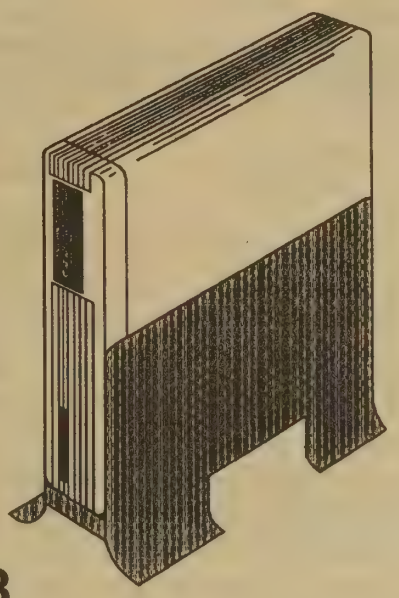

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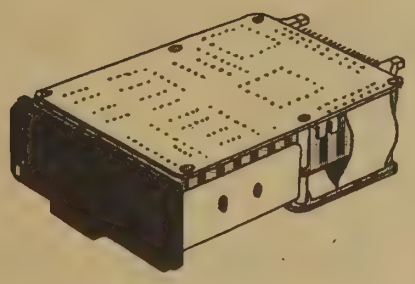

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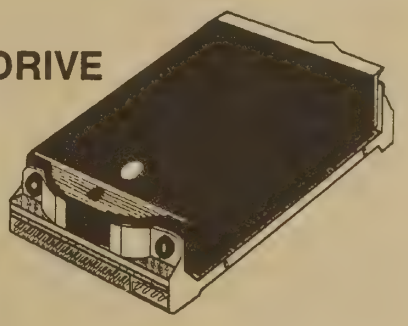

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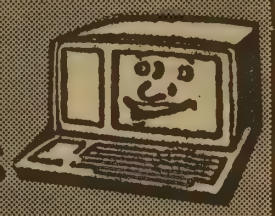

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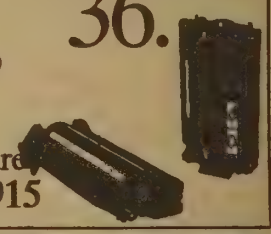

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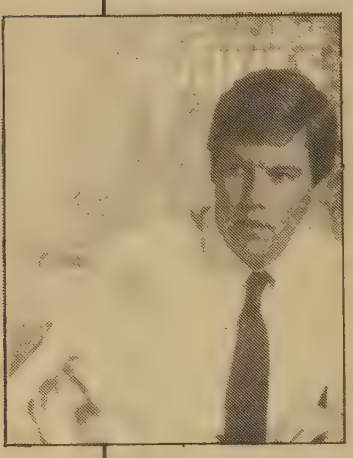

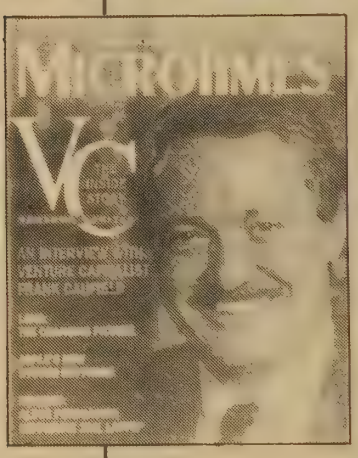

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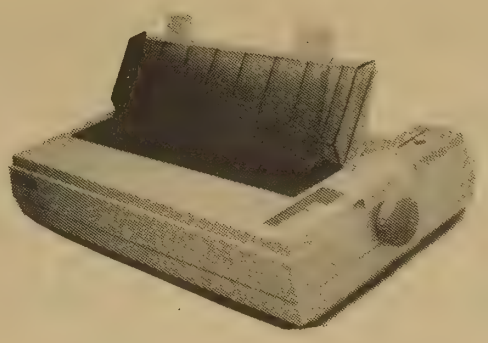

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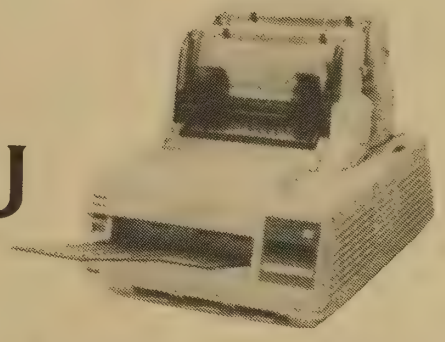

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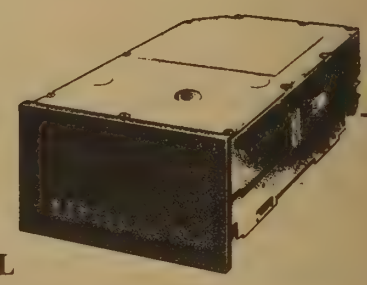

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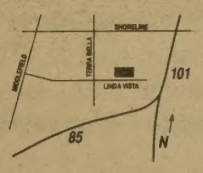

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There's Never An End To On-Line Opinions And Free Advice On CompuServe

Is This What The World's Coming To?

If you like good computer columns and like talking about computers, then try the interactive column forums on CompuServe's PC Magnet (go pcmagnet at the ! prompt). Unfortunately many of the good observations and interesting analysis that come and go on the system are never read by the public and scroll off to never-never land. I've collected some recent exchanges between the participants and received permission from Ziff-Davis and PC Magnet to print a few of my favorites.

ON MODEMS

Fm: Raymond Chuang
To: John C. Dvorak
John, not necessarily—remember the good old days when a Hayes 2400 bps modem cost nearly $900? With the price of modems falling as it is, I'll bet even money that a V.32/V.42 bis modem costing less than the $450 suggested retail will be shown at this fall's COMDEX.

Fm: John C. Dvorak
To: Raymond Chuang
I do recall...but I'd still take that bet concerning the $450 modem. Not with V.42 bis it won't be, until 1991's COMDEX.

Fm: Joe Odenweller
To: Raymond Chuang
Raymond, a full V.32/V.42 bis will still be about $1000-1500 by this fall. In our discussions at work we have discussed purchases of new async modems (currently buying 2400 MNP 5) for our access lines, and have decided we should lease all new modems until we switch to V.32/V.42 bis this summer. Our VPA will still have those modems running about $900 this summer. It will take six months to catch up to institutional demand once they are available in volume. Then the prices will drop like a rock (since all engineering costs will have been paid by institutional purchasers). Next spring is when they will be reasonable (about $600).

ON VGA CARDS

Fm: Wick Smith
To: John C. Dvorak
John, one important fact about VGA cards that is seldom reported is how much high memory they need. The V7 VRAM is a nice card, but according to reports here it eats up just about all the high memory you have when run in 16-bit mode. That means you're out of luck if you want to run TSRs and drivers up there in high memory.

If you find a great VGA card, we'd like to hear about its high memory requirements, if those are published somewhere in the docs.

ON AN UPCOMING CONFERENCE IN SAN FRANCISCO

Fm: Ray Gallon
To: John C. Dvorak
The following is the first announcement of the ENA conference in May in S.F. I'd like to post it somewhere in PC MAGNET. Is that permissible, and if so, where would be the most appropriate place? Also, if there's any way of your mentioning it in one of your columns somewhere, that would be appreciated.

Online Announcement
Please port this item or print it out and share it with all your networking friends and acquaintances and those people who should be learning about electronic networking. An online registration form is also available. Call Margaret Chambers, (415)8TO-CONF.

ELECTRONIC NETWORKING ASSOCIATION MEETS IN SAN FRANCISCO, MAY 23-26, 1990
"Online Networking: Collaboration in the Global 90s" is the theme of the fourth face-to-face conference of the Electronic Networking Association which will meet May 23-26, 1990 in San Francisco. ENA is the hub of knowledge exchange about the rapidly advancing collaborative computer-based communication technologies—the technology itself, the impact of that technology on organizations and individuals, and its global potential for productivity and learning.

A phenomenal growth in the use of electronic messaging has occurred in the past five years as users have skyrocketed from 1m to 8.6m with messages exceeding 1.5 billion in 1989. Beyond messaging, another level of group interactive communications offers great possibilities for productivity gains, team and project enhancement, strategic scanning, and consensus building, as well as other benefits for knowledge workers. ENA focuses on these emerging group applications and their impact on organizations.

ENA Online, a computer conferencing and information service to be developed for the meeting, will provide a unique gateway to multiple conferencing, videotex and other online information systems. Available from a bank of computers on-site or from personal computers in the hotel, this network will permit attendees to explore and compare features and advantages of many group communications services. Vendors interested in having their product or service included on the conference system should contact Mark Graham, Pandora Systems, (415)346-4188, online via MCI Mail: Pandora; Internet: mark@Pandora.sf.ca.us.

"John, Novell is in for some rough times ahead. Everyone is jumping on the LAN marketing bandwagon these days. And guess what, most of them are going with LAN Manager stuff, and nobody is going with Novell."

ON LOCAL AREA NETWORKS

Fm: Joe Odenweller
To: John Kevlin
John, Novell is in for some rough times ahead. Everyone is jumping on the LAN marketing bandwagon these days. And guess what, most of them are going with LAN Manager stuff, and nobody is going with Novell.

Fm: Haig Hovaness
To: Joe Odenweller
Have you got any hard numbers to back your assertion that LAN MAN is outselling NetWare? Considering that Novell has a 400 thousand user head start, it will take a while for LAN MAN to make a dent. Personally, I think the chances of LAN MAN besting either Novell or Unix in the server marketplace are slim to none. Microsoft would be well-advised to stop trying to make OS/2 all things to all people on all platforms.

Fm: Mark Cuban
To: Haig Hovaness
Take heart Joe, my experience shows LAN MAN flavors outselling Novell in multi-server and >200 user environments. Remember what Novell says. 400 K NOS, four million users. That's a whopping ten per LAN. That's not the market LM wants.

I think that Novell will always outsell LM in total quantities. Just like MicroSoft Works probably outsells MicroSoft Word in terms of sheer quantities. The question is, whether the sale of lots of NW286 and NW386 ELS can support eight flavors of NetWare and its relations (CXI, Excelan, Kinetics, Softcraft, etc). From the Office of Jeanne Dixon...

Now wait until you hear what these guys think about UNIX, OS/2, IBM and Microsoft! ■

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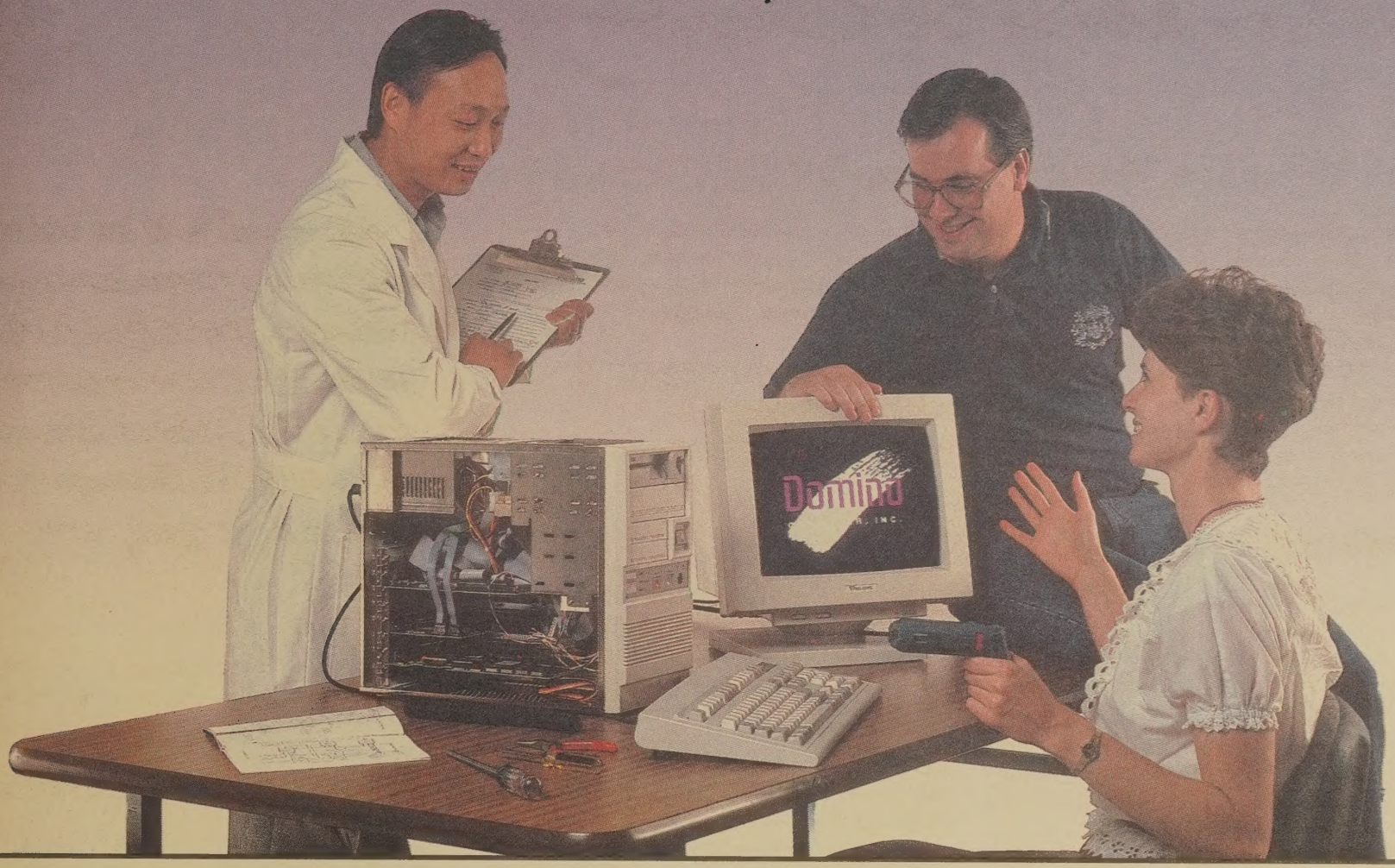
John C. Dvorak graduated from the University of California. He is a contributing editor of PC Magazine *and* MacUser, *and is considered by many to epitomize the contrarian view of things—a charge that he vehemently denies. Dvorak's motto is: If you have nothing nice to say, then don't say anything at all.*

You Build Your Own Computer



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Use the Brains IBM Gave You!

When the PC was new, big programs rarely used even 64K. So IBM® seemed quite generous when it gave us 640K of user memory.

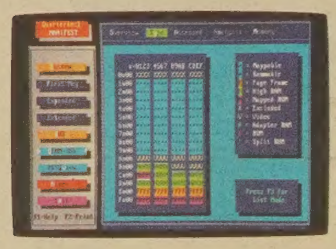
That was eight years ago. Today, users are struggling to accommodate network and mouse drivers, TSRs and buffers within that same 640K along with the new generation of more powerful programs. It's known as 'RAM cram.'

If this is a problem you're facing (or expect to face) we have good news for you.

Introducing Manifest™—the Quarterdeck memory analyzer

Even expert PC users may be unaware how much of the capacity in most PCs is wasted.

That's why Quarterdeck Office Systems, publishers of DESQview,™ developed Manifest, a new, inexpensive tool to assess memory use. It's the result of years of in-depth study of the PC.'s memory map. It does for memory what PC Tools does for disks. All for under $60.



Manifest shows you things you might not otherwise know about your PC.

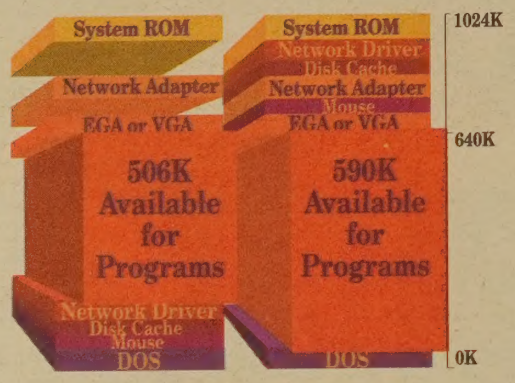
Manifest gives you a guided tour 'under the hood' of your PC, to show what's going on, what type and amount of memory is available, and even which portions of RAM are faster.

INFO WORLD BEST IN ITS CLASS Dec. 18, 1989

Then it suggests how you might load networks, buffers, TSRs, mouse drivers, and other utilities into unused memory.

It finds and displays all the contents of your AUTOEXEC.BAT and CONFIG.SYS files, which can be a big help in diagnosing problems.

Manifest even tests memory board speed so you can make informed buying decisions.



Before **After**

Your memory is full of holes. We can fill them. And give your programs more room to run smoothly.

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And if you have an EGA or VGA-equipped PC and don't need graphics at the moment, QRAM will make an additional 96K of memory available! When you need graphics again, QRAM will switch you back to graphics mode! Think how helpful that will be for those big dBASE files.

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QEMM is the all-in-one memory manager for breaking the 640K barrier.

QEMM 50/60 is for the PS/2™ series 50 and 60. It works with all IBM-compatible memory boards, and comes with a long list of adapter data to help you use your MCA hardware better.

QEMM-386 is for all 386-based computers, including older PCs with 80386 upgrade boards. It allows you to expand your RAM capacity—all the way to 32 megabytes, if you like.

Both give you expanded memory compatible with EMS 4.0 and EEMS. Both are also extended memory managers, compatible with XMS.

And both give you maximum control over your memory in the 640K-1024K area, guiding you through decisions on where to move TSRs and network drivers for maximum performance.

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System Requirements

Manifest: 8088, 8086, 80286 80386 and i486 PCs & PS/2s

QRAM: 8088, 8086, 80286 PCs. Use of high memory is only available when PC has EMS 4 or EEMS expanded memory or Chips & Technologies shadow RAM.

QEMM 50/60: 80286-based PS/2s and compatibles with IBM PS/2 80286 Memory Expansion Option, IBM PS/2 80286 Expanded Memory Adapter/A or compatible.

QEMM-386: 80386-based PCs and PS/2s and PCs with 80386 add-in boards.

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